646

PRICE 15 CENTS

JUNE 16, 1888.

THE AMERICAN ARCHITECT AND BUILDING NEWS

VOL. XXIII. REGULAR EDITION NO. 651.

ARCHITECTVRE

ENGINEERING

DECORATION

CONSTRVCTION

TICKNOR & COMPANY

BOSTON MASS.

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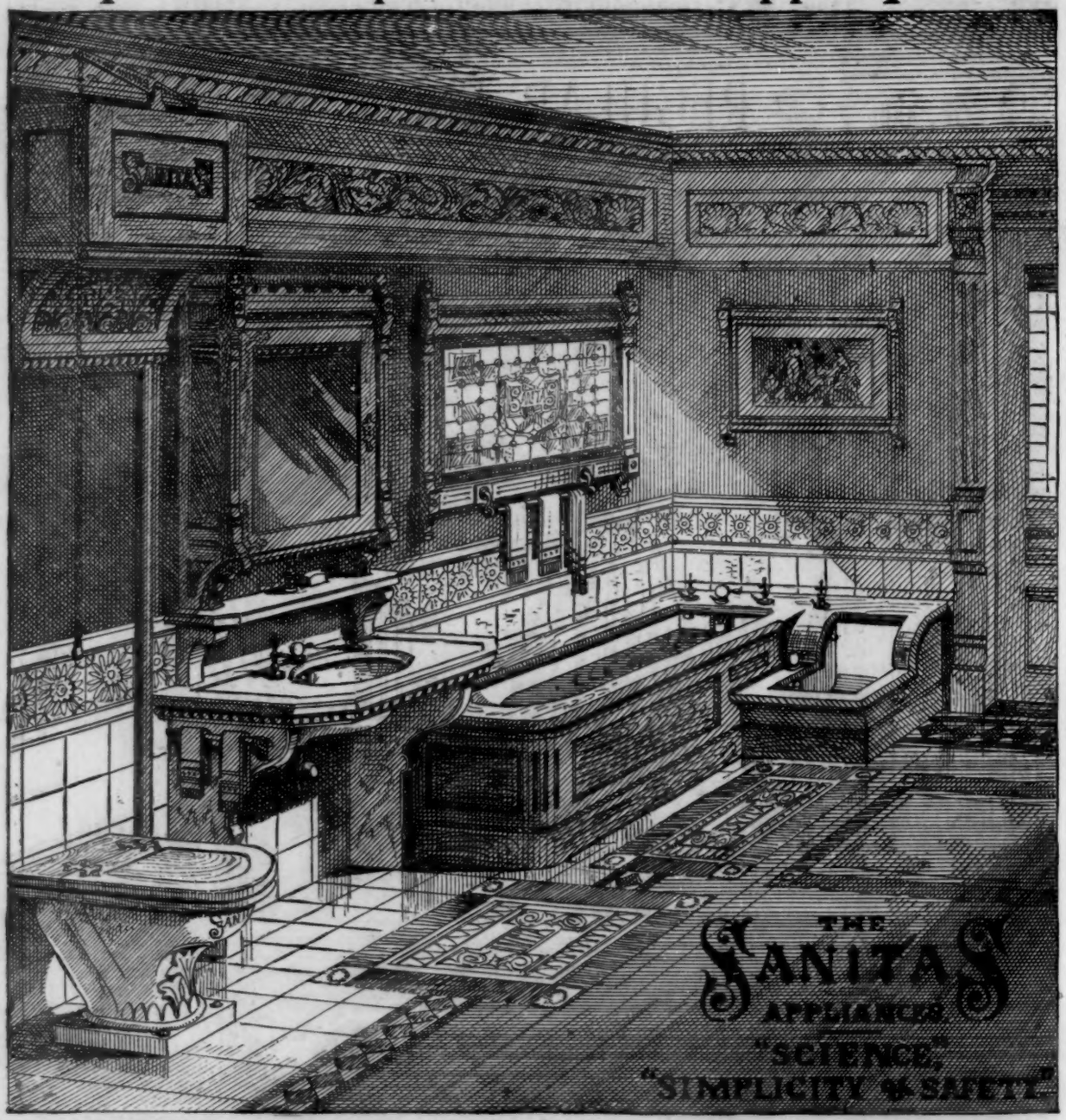

THE "SANITAS" MANUFACTURING CO., 207 TREMONT ST., BOSTON, MASS.

Branch Offices: 64 Gold Street, New York, N. Y. 229 Walnut Street, Cincinnati, O. 47 to 49 Dearborn Street, Chicago, Ill.

THE AMERICAN ARCHITECT AND BUILDING NEWS.

VOL. XXIII. Copyright, 1888, by TICKNOR & COMPANY, Boston, Mass. No. 651.

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Entered at the Post-Office at Boston as second-class matter.

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THE *British Architect* entirely approves the measure now under consideration by the Illinois State Association of Architects, by which it is made an offence, to be punished by expulsion from the Association, for any member to allow draughtsmen in his office to do work as architects in their own name, either in or out of office hours. Although the adoption of this rule will seem rather harsh to a good many ambitious assistants, who entertain dreams of rising to sudden fortune through the winning of some great competition by designs made out of office hours, there can be, as it seems to us, no doubt that it would in the end be advantageous for assistants as well as architects. Mr. Wightwick, in his invaluable book, "*Hints to Young Architects*," lays down, as a maxim to be kept in mind by every young man employed in an architect's office, that "the better he serves his master, the better he will serve himself;" and this is true to an extent which even architects hardly realize. There are, or were in our day, certain draughtsmen who maintain a sort of chronic belligerency toward their employers in particular, and all employers of draughtsmen in general. These, when they can get an audience of assistants around them, indulge in long harangues about the injustice of those architects who object to having their draughtsmen do what they see fit out of office hours, and encourage the discontented ones to try to "better themselves" by surreptitious outside work. We have known cases where seed of this kind, falling on congenial ground, has blossomed into the purloining of quite a gallery of photographs of the master's work, to be reproduced at a small scale, and sent about, with the name of the enterprising draughtsman attached to them; or into a private arrangement between an unscrupulous client of the architect and an unprincipled draughtsman, by which an important commission was withdrawn from the office, on a flimsy pretext, and handed over to the draughtsman, who resigned his position just in time to carry out his former employer's design; but even where a young man shrinks from such gross rascality as this, he will often spend many hours, when he ought to be in bed, in pursuing some *ignis fatuus* of a competition, with no better result than unfitting him for his regular duties, and exposing him to the suspicion of his employer, who is sure to notice his lukewarm zeal in his service, and his languid, sleepy way of doing his work, and to mark him silently as the first to be discharged, if it should be necessary to reduce the office force. It must never be forgotten by draughtsmen who hope to advance in their profession that the way to make themselves valuable is to enter thoroughly and heartily into their employer's plans; to see that their own work goes on smoothly, quickly and with due regard to that of others; to remember that an hour's delay in the completion of their part of a set of drawings, or neglect to deliver them to the proper person when completed, is likely to cause serious loss and annoyance, and, so far as possible, to try to understand just how their master wishes the office work to be conducted, and then to do their part to have it move along in exactly this way, with the care and zeal which he would himself devote to it. This may seem like unreasonable faithfulness; but any architect will testify that the ability to carry on an office with smoothness and economy is the most profitable of all professional accomplishments. Without it, neither colossal genius, nor unlimited employment, will enable an architect to earn a comfortable living; with it, a small business will lead surely, though perhaps slowly, to fortune; and this accomplishment can only be acquired through the sort of practice in which a faithful head-draughtsman is trained.

AN extraordinary accident is reported to have occurred recently in London, and the attention of architects is publicly called to the dangers which follow from their well-known ignorance, carelessness and so on. It appears that an old gentleman was recently found dead in his bath-tub; and the inquest showed that death had resulted "from syncope due to the excessive heat of the bath-room, and the effect of the moist vapor which had accumulated in it." The coroner, in reporting upon the case, asserted that such occurrences are not rare. The moral which the *Lancet* draws from the circumstance is that architects are to blame for expending less study upon the proportions of bath-rooms than of their state apartments. A bath-room, it says, ought rather to exceed than fall below the capacity of seven hundred cubic feet which "hygiene recognizes as the minimum allowable for an inhabited room;" and "ventilators, with perhaps hoods, should always be provided to carry off the excess of vapor." It is rather surprising to find an Englishman ascribing to baths those fatal qualities which the imagination of the Polish Jew attributes to any method of applying water to the skin; but we must remember that in this case it is not the cold douche of the portable hat-tub which is referred to, but the warm bath, a much less familiar affair in England. As our readers know, the ordinary method of preparing for the enjoyment of one of these luxuries in England is to fill a tub with cold water, and attach a little lamp, and then wait quietly until the water is warmed to the taste. Most people's patience gives out long before the water is more than lukewarm, and in any case there is little danger of syncope from excessive heat or vapor likely to be generated by this contrivance; but it might possibly happen that an overfed old gentleman, meeting with some more powerful apparatus than usual, would go to sleep after setting it in operation, and wake to find himself surrounded by vapor. Under such circumstances the impulse of an American would be to extinguish the lamp, or turn off the hot water, as the case might be; but Englishmen seem to suffer a sort of paralysis in a warm atmosphere, and the only thing which the numerous victims of these accidents seem to think of is to lie down at once, and die in peace.

MR. E. DYCKERHOFF, a first-rate authority on the subject, has written in the *Deutsche Bauzeitung* a series of articles on cement and concrete, which are valuable, as containing the result of long and intelligent study and practice. So far as theory is concerned, Mr. Dyckerhoff's observations do not differ from those of other writers. To mix the matrix and the aggregate well together, so that every particle of sand or stone shall be completely surrounded by cement or mortar, is the essence of his, as of all other good methods of preparing concrete. For this purpose he employs, in making concrete for foundations, one part Portland cement, with six to eight parts sand, and six to eight parts screened pebbles, or eight to ten parts of broken stone. For walls, piers, and vaulted floors, or other constructions subject to a cross strain, one part cement is used to five or six parts sand, and five or six parts screenings, or seven to eight parts broken stone. It is hardly necessary to say that such concrete as this, containing less than half the usual proportion of cement, can only be made suitable for use by very careful and thorough mixing, and the principal lesson to be learned from Mr. Dyckerhoff's paper is, in fact, that care and skill in manipulation will generally take the place, with advantage, of at least half the cement in most processes where cement is employed. In determining whether six or eight parts of sand shall be used to one of cement, Mr. Dyckerhoff

leaves nothing to chance. Where the sand is of unknown quality, samples are mixed with varying doses of cements, and, after setting, tested both for tensile and crushing resistance, and the proportions found to be most suitable for that particular sand are rigidly followed. Nothing, as he says, can be told about the quality of sand from its appearance, provided, of course, that it is free from clay or loam; and samples of doubtful aspect will often give a concrete surpassing in strength that made from much brighter and better looking sand.

AFTER the best proportions of the materials are determined, they are maintained with a precision unknown to the practice of the average builder. The cement is never measured, for the reason that it settles more or less closely in the measure, according to the rapidity with which it is filled, and the actual quantity contained in a given volume will thus vary. Instead of this, a bag of cement, which always contains a certain weight, and thus a standard volume, is taken, and the requisite amount of sand and pebbles for mixing with this quantity of cement is then laid out by means of a measure, which, for these materials, gives sufficiently accurate results. The pebbles are piled separately, and the sand is spread out in a "pen" of clean close-jointed planks, and the cement spread over it. The whole is then thoroughly turned over, dry, three or four times, according to the character of the sand; and, after adding, in one dose, the necessary quantity of water, the mortar is turned three times more, forming a uniform, slightly damp mass. The pebbles or broken stones, which have meanwhile been well washed, and left a little moist, are then added, and the whole turned two or three times more, as may be necessary to coat all the stones completely with mortar. This point is regarded as of the utmost importance, and even during the transportation of the concrete to the place where it is to be used, the workmen are required to watch it, and push the stones that may be shaken to the surface by the jolting of the cart back again into the soft mass, before they have time to dry. On reaching their destination, the carts are unloaded as near as possible to the intended position of the concrete, which is then placed carefully in the trenches, by experienced workmen, in layers about eight inches deep, the men keeping always careful watch, to see that all the pebbles are completely surrounded by mortar; then strong laborers compress the layers with wooden rammers, shod with iron, until a film of water appears on the surface. In all cases, in Mr. Dyckerhoff's practice, the work is done by thoroughly experienced men, under the constant supervision of an expert, this care being, in his opinion, necessary to success.

WHERE the concrete is used for building above ground, it is generally necessary, after the walls are completed, to give them a finishing coat, to cover the roughnesses incidental to the first moulding. This is done with a mixture of one part Portland cement with two or two and one-half parts of sharp sand, to which is added, unless the sand contains fine particles, about one-tenth of a part of fat lime, in the form of whitewash, or thin "putty," in order to make the mortar work smoothly and easily. After thoroughly washing the concrete walls with water, applied with a broom, and hacking any smooth places, the mortar is applied in two or three layers, to a total depth of about three-eighths of an inch, straightened with a straight-edge, and rubbed down carefully with a wooden float. When this has set, a thin coat of clear cement is applied with a wooden tool, and rubbed down with a float covered with felt. All smoothing with iron or steel trowels or floats is avoided, as it is found that these dispose the mortar to blister and crack. For surfaces exposed to water, the last application is omitted, and dry cement is sprinkled over the damp surface of the smoothing coat, and rubbed down with a polishing trowel, or with a burnisher.

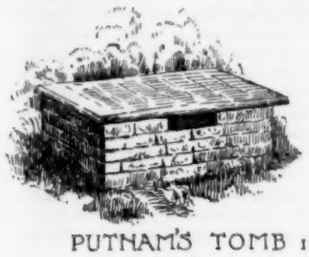
A LECTURE was recently delivered before the Architectural Sketch-Club of Chicago by Mr. Martin Moylan, on "Practical Plumbing," which has attracted a good deal of attention in the trade, as well as among the architects of the city. As reported in the *Sanitary News*, the lecture was devoted mainly to waste and ventilation pipes, which, as Mr. Moylan truly said, are the least satisfactory of the plumbing appliances at present in use. It will surprise a good many architects to hear that Mr. Moylan greatly prefers lead for soil-pipes, and in the model drainage-system which he described, all the waste-pipes were to be of lead, extra thick, carried straight up in partitions set with six-inch studs for the purpose, and attached to the studding by means of brass lugs, soldered to the pipe, and supported by pipe-rests, fastened to the studs, leaving the portion of the pipe passing through the floor always free for inspection. With waste-pipes of this sort, tested by hydrostatic pressure, and back-vents rather restricted in number, and carefully planned to avoid "by-passes," Mr. Moylan thinks the drainage of his model house would be as perfect as the present condition of the plumbing art admits; and he called upon his hearers to eliminate from their specifications all mention of iron soil-pipes, which, as he says, are of very inferior quality, apt to contain sand-holes or cracks, and liable to fill with rust, even if the plumber succeeds in putting them together so as to make them temporarily tight.

IT is probably true, as Mr. Moylan says, that iron pipe for plumber's use is of very inferior quality, but at present prices for such pipe the manufacturers are certainly not obliged to turn out bad pipe to save themselves from loss, and we should rather prefer, instead of going back to the lead soil-pipes of fifty years ago, to try whether the united efforts of architects, plumbers and inspectors of plumbing could not bring about a change in the morals of iron pipe makers. In Boston and San Francisco, for instance, soil-pipes must, by law, be tried by the hydrostatic test, and if this is faithfully applied, filling the pipes completely from cellar to roof, sand-holes and cracks have a small chance of escaping detection, and the manufacturer of pipes containing them is likely to lose, as a customer, any plumber who finds himself compelled to take down a stack of pipes to remove a defective length. In regard to the other objection which Mr. Moylan brings forward, that iron pipes soon fill with rust, we think he may have been unfortunate in the sort of coating applied to the pipes which he has used. It is certainly the general opinion among architects, if not among plumbers, that a pipe well coated with asphalt will remain free from rust for many years, and, in our own experience, while we have seen both iron and lead pipes corroded entirely through, we have never seen a cast-iron pipe choked by rust. If iron pipe can be properly made, and protected, either by asphalting or by one of the magnetic oxide processes, it has certainly many advantages over lead. A long lead soil-pipe, even if supported as Mr. Moylan advises, must suffer from expansion and contraction, which, it should be remembered, is greater with lead than with any other metal; while its softness exposes it to injury if any alteration should be made in its vicinity. We have seen a lead soil-pipe, apparently cased over securely, battered almost beyond recognition, and the gradual carbonization of the interior decreases its resistance. Moreover, according to Mr. Moylan, the lead pipe should be suspended from the studding, which is liable to settlement, while iron pipe may be, and often is, supported from the cellar floor, like a column, by means of a base specially fitted to it; and even, in the worst cases, is usually hung to the comparatively immovable brick walls instead of being supported by timbers.

A NEW sort of hospital-building is described in *Le Génie Civil*, which seems to have many advantages. The principle of construction seems to be the formation of an iron shell, to which is attached a wooden lining capable of being readily removed and replaced. The lining keeps the room cool in summer and warm in winter, while steam and water pipes can be carried through it, and, by means of a ridge-ventilator, air can be withdrawn from the room at any desired point by cutting openings into the space between the two shells. After being used for a sufficiently long time, the structure may be taken to pieces, the ironwork sprayed with carbolic acid, and painted, and the wooden lining-strips disinfected by baking or by washing with carbolic acid or bichloride of mercury, after which the whole can be put together again for renewed service. The expense of this complete disinfection is estimated at five per cent on the original cost of the structure, which, in Paris, is about five hundred dollars for each bed, for a twelve-bed pavilion, including all the iron-work, carpentry, painting and glazing, plumbing, gas-fitting and steam-heating, together with the beds and mattresses.

SOME AMERICAN MONUMENTS.[1]—IV.

MEMORIALS TO MAJOR-GENERAL ISRAEL PUTNAM.



PUTNAM'S TOMB IN 1875. BROOKLYN CONN.

THE first memorial erected to Putnam, was an old-fashioned brick tomb, covered with a stone slab, and placed over his grave in the town of Brooklyn, Windham County, Connecticut. It is believed to have been erected by his family. The stone slab bore the following inscription, prepared for the purpose by Timothy Dwight, President of Yale College:

SACRED BE THIS MONUMENT
TO THE MEMORY
OF
ISRAEL PUTNAM, ESQUIRE,
SENIOR MAJOR GENERAL IN THE ARMIES
OF
THE UNITED STATES OF AMERICA,
WHO
WAS BORN AT SALEM,
IN THE PROVINCE OF MASSACHUSETTS,
ON THE 7TH OF JANUARY
A. D. 1718,
AND DIED
ON THE 19TH OF MAY
A. D. 1790.

PASSENGER,
IF THOU ART A SOLDIER,
DROP A TEAR OVER THE DUST OF A HERO
WHO
EVER ATTENTIVE
TO THE LIVES AND HAPPINESS OF HIS MEN,
DARED TO LEAD
WHERE ANY DARED TO FOLLOW;
IF A PATRIOT,
REMEMBER THE DISTINGUISHED AND GALLANT SERVICES
RENDERED THY COUNTRY
BY THE PATRIOT WHO SLEEPS BENEATH THIS MARBLE;
IF THOU ART HONEST, GENEROUS AND WORTHY,
RENDER A CHEERFUL TRIBUTE OF RESPECT
TO A MAN
WHOSE GENEROSITY WAS SINGULAR,
WHOSE HONESTY WAS PROVERBIAL;
WHO
RAISED HIMSELF TO UNIVERSAL ESTEEM,
AND OFFICES OF EMMINENT DISTINCTION,
BY PERSONAL WORTH
AND A
USEFUL LIFE.

Until 1875 the tomb was in a good state of preservation, but at the end of the succeeding eleven years it showed the desolating marks of the sacrilegious relic-hunter.

AS IT APPEARED IN 1886.

On one occasion Mr. D. P. Tyler, sought to preserve the slab by taking it to his home, but it was afterwards replaced.

Recently, Mr. W. H. Putnam, a descendant of the General, has signified his desire to present it to the Connecticut Historical Society. Near the tomb are two slabs, resting over the remains of Putnam's wife and two young sons.

THE PUTNAM STATUE.

Judge Joseph P. Allyn, of Hartford, Connecticut, who died in 1869, left by his will five thousand dollars in trust to his father "Timothy M. Allyn, Charles Dudley Warner and Marshall Jewell, for the purpose of procuring a piece of statuary to be placed in the Park at Hartford." And he added, "should others be willing to add to this sum with the design of securing a more valuable specimen of art, that would adorn our city, these trustees are at liberty to unite with them in accomplishing the object." The father of Judge Allyn also gave five thousand dollars, and the subject to be executed, as chosen by the trustees, was a bronze statue of General Putnam. The order for the statue was given directly to Mr. J. Q. A. Ward, of New York. It was dedicated June 17, 1874, with extensive military and civic ceremonies. The statue[2] is eight feet high, standing upon a pedestal of granite ten feet high, designed by Mr. R. M. Hunt, of New York. The latter cost two thousand dollars, and was paid for by the city of Hartford. In presenting the statue to the city, at the time of its dedication, Mr. Warner said, "Perhaps it is proper for me to add that Mr. Ward, working without other authentic portrait than a mere sketch, and yet obliged to conform to the popular idea of Putnam in the traditional likeness, has sought to reproduce the hero of the people, and at the same time to attain a dignified expression of the spirit and gallantry of the Revolutionary time. His figure is that of Putnam the soldier." The Hartford *Courant*, of which Mr. Warner is editor, of June 18th, gave the following description of the statue: "The figure is clad in the uniform of a Major-General of his time. The costume is closely studied from uniforms of the period, and it happens to be as well adapted to an heroic figure as any classic drapery. The soldier stands erect, and in an attitude of motion, about to step forward, as if he had just been summoned. In his right hand, and by his side, he holds his military chapeau; in his left he has grasped his sword and belt, which he presses to his left side as if in some haste. The sword, with

Philip the Good. Charles the Bold.
From the Tomb of Maximillian, Innspruck.

its lion-headed hilt, is a study from Putnam's own sword now deposited in our Historical rooms.

"The weight of the figure is mostly thrown upon the right foot, with the left almost lifted as for a step, the position of the sword and the uplifting of the head, as if in excited attention, all suggest that the repose of the figure is about to be broken by motion, and give a most animated character to the whole. The head, in form and pose, with the leonine locks, is majestic, and the face is lighted up with a most noble expression. It is the face of old Putnam, in a moment of inspiration; it is old Putnam in figure, but face and figure are both somewhat exalted, and seem to be informed with all the glory and enthusiasm of the coming struggle. This is not the place to enter into any detailed criticism; but we cannot but congratulate our city upon the possession of a work of art which would adorn any capital in the world."

Before the arrival of the statue in Hartford, and during its execution, the *Courant* had anticipated its coming and extolled its merits by several complimentary articles, and many persons expected, with reason, to see a masterpiece. It was not, however, greeted by the public generally, or by private individuals of taste and acquaintance with sculpture, as wholly satisfactory. A proper feeling of delicacy toward the father of Judge Allyn, prevented, during his lifetime, any public expression of dissent from the warm praises of

[1] Continued from page 270, No. 650.

[2] See the *American Architect* for September 4, 1886.

the *Courant*. Private criticism declared that the statue failed to give the slightest idea or impression of "the man who went into the wolf's den, the soldier who galloped down the rocks, who hung the spy, who wrote the famous letter, and who left his plow in the furrow, when the news from Lexington was brought to him, mounted his horse and hurried off to the scene of war, without stopping to say good-by to his wife."

"The judgment of reliable persons," they affirmed, "had declared, and the character of Putnam's acts all his life had substantiated it, that 'Old Put' was an impulsive, courageous, dare-devil of a fighter, and not the attendant of a court in the act of caring for his master's accoutrements. A hero, always ready to lead, sword in hand, where any dared to follow."

King Arthur. From the Tomb of Maximillian, Innspruck.

Artists, as well as the public, have criticised, justly, the position and character of the statue.

PROPOSED PUTNAM MONUMENT OF 1853.

At a meeting of the leading members of the Windham County, Connecticut, bar, held in the winter of 1852, the late Judge A. T. Judson, suggested the formation of an association, for the purpose of erecting a monument to Putnam. The committee appointed on this occasion issued a call for a meeting of the citizens of the county to be held in Brooklyn on the 13th of December, 1853, for the purpose of organizing a County Putnam Monument Society. The meeting was held, an organization formed, officers chosen, consisting of a president, executive committee and a vice-president from each town in the county. The Executive Committee entered upon the literary part of its duty with vigor and promptness, by publishing a report of the meeting, accompanied by a lengthy, forcible and eloquent address, setting forth the claims of the Society to public support.

With the issuance of this address, the officers of the Association, with one exception, "rested from their labors." In the following January, the President of the Society, Hon. C. F. Cleveland, addressed a Putnam-monument meeting at Willimantic. But neither his address, nor the above-mentioned efforts, brought a dollar to the hands of the treasurer.

No call was made upon the State, and thus ended the scheme.

A feeble effort was also made under Governor Ingersoll's administration, 1873–74, to awaken interest in Putnam's memory, but without avail.

EQUESTRIAN STATUE OF PUTNAM.

The monument over "Old Put's" grave had become so near an indistinguishable ruin by the wear of time and mutilation of visitors, that in the autumn of 1885, Mr. N. W. Kennedy, the editor of the *Windham County Standard*, made an humble and repeated appeal to all thoughtful, charitable and appreciative citizens to contribute their sums or mites toward the erection of a deserved statue or monument over the old hero's dilapidated grave.

He also called a meeting of the citizens of Brooklyn, and the adjoining towns, to further the object of his appeals. The result was that a Putnam Monument Association was formed in that town, and a general committee of the citizens selected for the purpose of raising ten thousand dollars. It was also decided that, if this sum could not be raised by subscription, the National Congress or the State Legislature should be asked to assist.

At a subsequent meeting of the town an appropriation of $500, was made, but as the other towns in the county had taken no steps in the matter, it was finally decided to ask the Legislature for $10,000, with the expressed hope that at least $5,000 could be raised by private subscription. Accordingly, a committee from the Association presented a petition to the Legislature of 1885–86, asking for the above sum, and it was promptly appropriated.

The resolution making the appropriation required that the monument should be placed over the grave of Putnam.

A single negative vote was cast against the appropriation, by an independent member, who claimed that his constituents would not approve an expenditure by the State which the nation should pay.

A committee of seven leading citizens of the State was appointed by Governor Harrison, "To procure a monument for the grave of the Revolutionary hero, Israel Putnam, in the town of Brooklyn, the cost not to exceed $10,000." Their names were: Henry M. Cleveland, of Brooklyn; Henry C. Robinson, of Hartford; Colonel Heman A. Tyler, of Hartford; Senator George P. McLean, of Simsbury; ex-Lieutenant-Governor George G. Summer, of Hartford; George F. Holcomb, Mayor of New Haven, and Morris W. Seymour, of Bridgeport.

They immediately issued the following curious circular:

"Commission to procure Monument to the Memory of General Israel Putnam.

HARTFORD, CONN., February 19, 1886.

At a regular meeting of the commission appointed by the State of Connecticut to procure a monument to the memory of General Israel Putnam in the town of Brooklyn, Conn., held at the State Capital, February 19, A. D. 1886, the entire commission being present, it was voted to invite designs for a monument to be erected in Brooklyn, Conn., to the memory of General Israel Putnam, said designs to be submitted to the secretary of the commission on or before the 15th of May. A. D. 1886. No restriction is made upon the nature, style or character of the monument except that its cost must not exceed the sum of ten thousand dollars.

The commission will allow the sum of two hundred and fifty dollars for any design which they may choose to accept.

Voted That the secretary is hereby directed to advertise for designs in conformity with the foregoing vote." Signed by the Commissioners.

Appended to the above were these two sentences:

"In pursuance of the foregoing votes, all persons desiring to compete for said monument will present their designs or models properly sealed on or before the 15th day of May, A. D. 1886. There being no limitation as to the style or character of the design (provided the entire expenses of erecting the monument does not exceed $10,000, ten thousand dollars), every designer may rest assured that his claim shall have a fair and impartial consideration. Yours respectfully, Heman A. Tyler, Secretary of the Commission to procure a Monument to the Memory of General Israel Putnam. Office, 274 Main Street, Hartford, Conn."

And here, also, as with the statue of Nathan Hale, the story of this monument might well stop so far as art or the credit of the State are concerned. The necessity of some account of it, as a matter of history, is the only excuse for continuing.

In response to this circular, twenty-five designs were sent in, not one of which, as might have been expected, came from an artist of any professional reputation. All but four were returned to their fabricators without being exhibited to the public. The four retained for further consideration were submitted by George Keller, E. S. Woods, Karl Gerhardt and the Smith Granite Company, of Westerly, R. I. During the period set apart for the competition, the idea of an equestrian statue was suggested, Gerhardt's design being of this character. As a matter of course, the rejected competitors complained that the commissioners had not acted honorably. This was denied as something farthest from the facts, "the men composing the commission being of the best reputation for honor."

Frederick de Bouillon.
From the Tomb of Maximillian, Innspruck.

In the meantime, also, the question of site became a matter of consideration. The cemetery where Putnam's ashes had reposed in peace for nearly a century was generally regarded as an unfit locality for a State monument costing $10,000. There were those, however, who thought that, for all reasons, the ground sanctified by both the humble and the famous dead, the General, his family and his neighbors, was the proper and fitting place for his memorial, no matter how distinguished its origin might be or imposing its price. Considerations like these had no weight, either with the commissioners or the town of Brooklyn. In keeping with the character of the circular, the kind of artistic enterprise represented by the designs and the public idea conceived of the significance of the monument by the citizens of Brooklyn, the question of site soon became a subject of disgraceful wrangle, jealousy and private recrimination.

It embraced the various elements of influence in the village of Brooklyn, including the churches. Charges and countercharges were made by the parties interested, until it became almost impossible to tell who was right and who wrong. The Hartford correspondent of the New York *Tribune* wrote as follows on August 7, 1886:

"No commission established by the State for a number of years has had a more uncomfortable time reaching conclusions than the commission on the Putnam statue. In spite of the fact that the Act of the Legislature provided for the erection of a monument 'over the grave' of the Revolutionary patriot, the commission and the friends of the Putnam family immediately began the series of efforts heretofore detailed to establish a site for the monument in some conspicuous place in the town of Brooklyn, agreeing to dig up the bones of General Putnam, and thus create a new grave. After several meetings and two journeys to Brooklyn, the commission selected the post-office site, or the point just north of the Mattateo House, not far from the Congregational Church. This should naturally have had the effect of settling all trouble on that score, but it has had the opposite effect, and the factions of the town are very busily engaged in an effort to have the decision changed or ratified, according to which party they belong. The Congregational Society has erected an unsightly board fence just at the rear of the proposed site, and Mr. Thomas S. Marlor is busy trying to get the society to remove the fence, while others are endeavoring to have all obstructions placed in the way of the site and to make it as unpleasant for the commission as possible. Then, again, in the matter of selecting a statue: the twenty-five designs submitted to the commission were as miscellaneous a lot of monuments, statues and designs as ever were gotten together. It was the desire of the commission to secure an equestrian figure, but it neglected to so stipulate in their call for designs, and as there was only one equestrian model submitted, after weeks of delay, the competition has been reopened on an equestrian basis. Meanwhile, the commission has accomplished absolutely nothing satisfactory to itself or those most interested.

Leopold III. From the Tomb of Maximilian, Innspruck.

"Hon. Thomas S. Marlor offered to give to the commission eight eligible lots in the cemetery as a site for the monument. The offer was refused. The town of Brooklyn itself did nothing in the way of offering sites. It, however, held a meeting, the largest ever held in the town, and ardently recommended that one of the two sites, offered free of expense to the town by one of its citizens, should be adopted by the commission."

Mr. Marlor made several other offers of localities for placing the monument, one of which, called the "Mortlake house site," was eventually accepted. The Mortlake house derives its name from the original title of the society, which itself was so called by its Anglo American purchaser of Massachusetts, after Mortlake in Surrey England, his old home.

Near by the site selected is the Congregational Church, which Putnam helped to build, and whose bell he himself rang whenever he was at home, it being an honor accorded him as first among the townsmen. It was in this edifice that the Rev. Samuel J. May, the abolitionist, preached, as a Unitarian. As another characteristic of the town of Brooklyn, it may be added that several years ago, when a monument on the common to May's memory was suggested, it failed, because it was "feared that it would *cumber the green*." Is it any wonder then that Putnam's tomb should go to ruin, and that the town that is honored by his ashes should consent to their removal from the side of his wife and children for the purpose of gratifying a vulgar public display.

Another and interesting historic site was spoken of. It was the identical spot where Putnam left his son Daniel to unhitch the oxen from the plough when he received the news of the skirmish at Lexington, jumped on his horse and hurried to Cambridge.

Another interesting spot in connection with Putnam is the house in which he lived after his return from the War, a paralytic, and where he died. It is about two miles from the centre of the village of Brooklyn and is now occupied by the town poor. The house in which Putnam was born, in Salem, is also still standing.

In the meantime, the site having been disposed of and the ashes of the old warrior removed to it, what of the monument?

After much consultation and the consideration of various influences, the committee decided in the latter part of June that the monument should take the form of an equestrian statue. In order to meet the objection, vital under most circumstances, that one of proper size and quality could not be obtained for the sum appropriated, a sub-committee was appointed, Messrs. Sumner and Holcomb, to ascertain for what sum an appropriate design could be procured. They reported that the above objection had no weight, and that Mr. Gerhardt would furnish an equestrian statue as large as the Washington in Union Square, New York, provide the pedestal, and erect them in Brooklyn for the ten thousand dollars appropriated by the Legislature.

Agreeably to this report, the committee invited all the former contestants to take part in a competition for an equestrian statue, adding another surprising section to the scheme. They decided that the monument must be dedicated on the 17th of June, 1888, or in about a year. On August 31st, five designs were received and placed in the Secretary of State's office. It appears, however, that but three were considered by the committee, those of Woods, Gerhardt and Bissell. That of Gerhardt was selected. As one among many amusing facts in the history of this affair, I quote this from the Hartford *Times*:

"The commission, in trying to reach a fitting conclusion, invited the three competing artists to view the three works, at separate times, and furnish their opinion. This gave each an opportunity of criticising his competitor, of which they were not slow to avail themselves."

The same paper gave an appropriate summing up of the solemn work of the committee:

"The commission appointed by the State was empowered to procure a monument to General Putnam, but forgot the most important part, *i. e.*, his horse. The Legislature forgot that this brute had ploughed with him and earned his bread, taken him to Bunker Hill and made him famous, carried him down Horse Neck and saved his life, inspired him on Long Island and cheered him in the long vigils by the Hudson, and finally followed him in his retirement to the peaceful shades of Brooklyn, and that this horse had thus become a link in the life of the hero that could not be broken. But the horse-sense of the commission remedied this oversight, and when they looked over the field of entries in the first competition and did not see the horse which had filled the void within them, they felt aggrieved and ordered that the artists put their talent and creative abilities in a horse. When the equine show was opened and five full-fledged beasts burst upon their vision, it may readily be surmised that they rejoiced.

"One deluded sculptor had still taken the portrait of General Putnam for his model and placed him upon a spirited charger; but although 'the commission were a unit in favor of the portrait,' the horse did not fill the ideal of their imagination. 'Horse Neck' suggested a long neck; many battles must mean a lean, lank and cadaverous body; torturous paths must bring disjointed limbs and broken bones; and all these qualities were combined in another design. The neck was very long, the body very lean, his legs very weak and decrepit. What matters it if the hero's face resembled an over-ripe tomato, or the arm stretched out in a very straight and angular way, or that the neck was short, and the body terribly disproportioned? The commissioners had yearned for a horse, and although the resting place of this Brooklyn animal had been mislaid and his name forgotten, the sight of this poor wind-broken beast will bring tears to the eyes of any beholder.

"Whatever fault the world at large may find with this model, the commissioners will ever deserve the gratitude of the people for their disinterested efforts in behalf of a poor, friendless and entirely forgotten horse; and when the solemn wilds of Brooklyn wake with the din and pomp of an inauguration, as they will next June, beside the high board fence, and the friends and neighbors of Old Put come to do him reverence, let there be no whisper of surprise or voice of disapproval. Let them simply behold and marvel."

It is to be said in favor of the committee that they refrained from any extravagant assertions in regard to art. They conducted the enterprise in the every-day business way, striving to get the largest amount of metal, in the shape of a horse, for the money they had at their disposal. On many points their conduct was freely criticised, though in no way affecting the result. Political and personal influence were in favor of the person who received the commission. It is affirmed, by some, that this fact put a stop to all private subscriptions, and it is certain that several gentlemen of large means who proposed to give generously in aid of raising the additional five thousand, refused to give anything. This is not, curiously enough, a very vital point, for it is pretty certain that the Legislature can be relied on to make up losses or provide other appropriations in case of need. In fact the contract had hardly been signed before the suggestion was made that it was not fair to permit the maker of the Putnam to suffer loss.

The transactions of the Hale and Putnam Monument Committees do not seem to show that the art of statue and monument making has made much progress in Connecticut since the committee on the Groton structure made their modest appeal to the Legislature in 1825. Nor do they indicate that the persons who have had opportunities of seeing and studying good statues and monuments, and who served on these committees, were actuated by any higher motives or more delicate sensibilities, than their associates who swung the hammer, or followed the plow. In fact, if the different conditions, existing in 1825 and 1886, were contrasted, it would be

found that the character of committees has very much deteriorated. The Groton monument was, so far as known, free from political jugglery, and an honest unpretentious piece of work. It is a pity that the same cannot be said of the Hale and Putnam statues.

T. H. Bartlett.

[To be continued.]

Illustrations

[Contributors are requested to send with their drawings full and adequate descriptions of the buildings, including a statement of cost.]

THE BANK OF MONTREAL, MONTREAL, CANADA.
[Gelatine print, issued only with the Imperial Edition.]

A description of this building will be found in the *American Architect* for April 9, 1887.

COMPETITIVE DESIGN FOR THE CITY-HALL, CAMBRIDGE, MASS. MESSRS. CHAMBERLIN & WHIDDEN, ARCHITECTS, BOSTON, MASS.

TOWER OF THE NEW STATION FOR THE CANADIAN PACIFIC RAILROAD, MONTREAL, P. Q. MR. BRUCE PRICE, ARCHITECT, NEW YORK, N. Y.

During the early spring the original and revised designs for this building were published in *Building*.

NEW PREMISES FOR THE UNITED STATES TRUST COMPANY, WALL ST., NEW YORK. MR. R. W. GIBSON, ARCHITECT, NEW YORK, N. Y.

DESIGN FOR DEDHAM INN, DEDHAM, MASS. MESSRS. WHEELWRIGHT & HAVEN, ARCHITECTS, BOSTON, MASS.

DESIGN FOR A COUNTRY CLUB-HOUSE AND A COUNTRY HOUSE. MR. HUBERT WESTELL, ARCHITECT, NEW YORK, N. Y.

HOUSE AT WASHINGTON, PA. MR. E. G. W. DIETRICH, ARCHITECT, NEW YORK, N. Y.

MEDIÆVAL HOUSES.[1]—I.

Fig. 1.

A primary classification of the dwellings of Mediæval times into country houses, city houses, manors and palaces or hôtels, suggests itself to the student. The real country house was that of the peasant-farmer living upon the seignorial lands. Among the city houses those of the nobles are distinguished as palaces or hôtels. Until the twelfth century, however, few of the nobles dwelt in the towns, the old customs of the conquerors of Gaul being followed by many generations of their descendants.

Modifications in the Gallo-Romanic dwellings followed slowly upon the invasions of the fifth and sixth centuries. The conquerors occupied the Roman "villas," living in the country rather than in cities. They built houses for their farmers and serfs, these houses necessarily conforming to the plans already in use. The manners, tastes and habits of a people are recorded in their domestic architecture. The plan of the dwelling is modified almost imperceptibly, and even the greatest tyranny hardly goes so far as to attempt any radical change in the homes of a conquered race. The invader, on the contrary, yields at first in those matters to the customs of the vanquished people, especially if the latter be the more civilized, but by slow degrees he moulds their habits into the direction of his own characteristics and traditions, making compromises between opposing customs, which in a century or two transform the dwelling of the first possessor of the soil, not so radically, however, but that some very apparent traces of the old customs and of the primitive structure remain.

During the Carlovingian epoch the country houses of France were of a defensive character, while in the town houses the spacious breadth of ground-floor which had characterized the older dwellings was supplanted by the system of piling story upon story, the defence of the towns by circumvallation, now well recognized, necessitating a more circumscribed ground-plan. Although the Romans in Gaul never used wood to any extent in their own construction, it is evident that the Gauls never quite ceased to use it, and that while during the Roman domination they gave greater importance to masonry, their skill in wood-construction was soon regained under the impetus of the Northern invasions. The art of carpentry employing exclusively wood in construction belongs only to the Indo-Germanic races. Wood enriched by painting played an important part in constructions of the Merovingian epoch, and the frequent fires which destroyed entire cities during the first centuries of the Middle Ages attest the almost exclusive use of carpentry in private dwellings.

Of houses built prior to the eleventh century nothing remains, and we can only form an idea of what they were from the laconic documents of the period, some very imperfect sketches, and a few bas-reliefs. But these writings, though vague, are sufficiently conclusive as to the important fact that the early Mediæval houses were made of wood, with a mixture of carpentry and of the piling up of timbers joined at the angles.

There were two ways of building in wood: the simple piling up of the trunks of trees squared where they joined at the corners; and the more or less ingenious systems of using wood for supports, for ties and for fittings in the erection of wooden buildings, which were extremely solid, very light, and sometimes carried up to a great height.

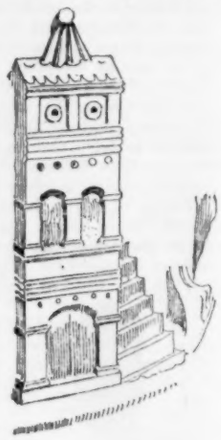


Fig. 2.

The first of these methods was not used by builders of any degree of intelligence, while the second belongs to the white races and was practised by all the peoples coming from the Northern plains of India, by the Scandinavians, the Francs and the Normans. The accounts that have been found of houses of the Merovingian and Carlovingian epochs show traces of the method of wood-construction by piling, of a well-developed knowledge of building in wood by timber-work, and of Gallo-Romanic traditions. In the oldest remains of French houses dating from the end of the eleventh century, we still perceive the strength of these different influences and discover the Gallo-Romanic traditions in more or less purity. The architecture of France in the Middle Ages made singular movements backward and forward, swayed by the predominance of the Gallic or German character over the relics of Latin civilization, or of local traditions and the tastes of the Trans-Rhenish invaders. Thus, as late as the twelfth century, during the greatest development of the Clunisian and Cistercian monastic orders in cities dominated by their influence, the house was constructed in masonry, the Roman traditions resisting the influence of those of the North, while in the more independent cities, or in those under the royal power, the wooden house supplanted day by day the house of stone. The more or less abundance of either of these materials near the centres of population does not seem to have had a decisive influence on the system of construction adopted, a singular fact which may be found explicable after further study.

CITY HOUSES.

The scarcity of ground in cities or walled towns obliged builders to raise several stories above the ground-floor. The houses of ancient Rome had a number of stories, but it does not seem that this method was followed in their provincial towns. In Pompeii, with very few exceptions, houses were only one story high, and ancient paintings rarely show them of greater height. In the Merovingian epoch, city houses had several stories above the ground-floor; contemporaneous authors mention this, and their sculptures or

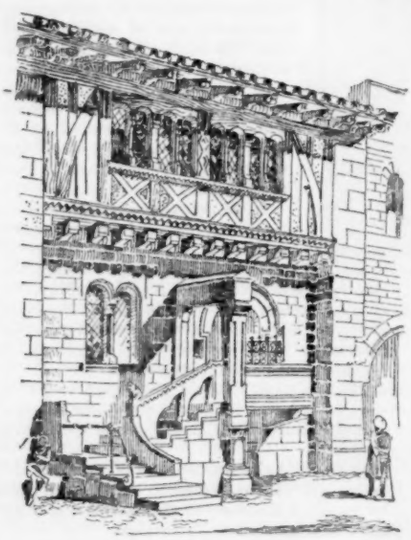


Fig. 3.

paintings show them to us more often in the form of towers or high pavilions than as houses next to one another. Gregory of Tours thus incidentally mentions them: "Priscus," said he, "had ordered, at the beginning of his episcopate, that they should carry up the walls of the episcopal house." "The Duke of Beppolen being at table in a house of three stories, the floor fell in."

[1] Translated from the French of Viollet-le-Duc, by Mr. A. B. Bibb.

The Merovingian houses, of which there are many traces to be found in the north of France, consisted generally of a stone cellar, not arched, and surmounted by a wooden building of small perimeter, the rooms being necessarily one above the other. Figures 1 and 2 are houses built after this plan.

Figure 1 shows evident wood-construction. It is from the carving on a capital of the first church of Vezelay, antedating the establishment of the corporation and the reconstruction of the church early in the twelfth century. In the same locality numerous fragments of stone houses are still found, dating from the beginning of the twelfth century. Aug. Thierry, in his "*Letters on the History of France*," speaking of the changes made by the establishment of a corporation in Vezelay, mentions the tendency of free citizens to surround themselves with exterior signs of their independence. "They raised around their houses, each according to his wealth, battlemented walls. . . . One of the most important among them, named Timon, laid the foundations of a large square tower."

Figure 2 shows one of those exterior stairways which were sometimes of circular form and are often found in the houses of the eleventh and twelfth centuries. On the Bayaux tapestry, Harold and his companions are depicted banqueting, on the day of his departure for Normandy, in a great hall on the first story of a building, which has a ground-floor of arcades and an outside circular stairway descending from the *salon* to the shores of the sea. The ground-floor is evidently of stone, while the story above looks like woodwork. The outside stairway is found in the Greek manuscripts of the eighth century (see "*perron*"), and its use survived as late as the sixteenth century.

It is worthy of note that in France, during the first period of the Middle Ages and as late as the twelfth century, private dwellings still followed the ancient Gallo-Romanic traditions for the ground-floor, while they had adopted the northern models for the upper stories. The northerners doubtless spared many of the Gallo-Romanic city houses and country places, which were of one-story

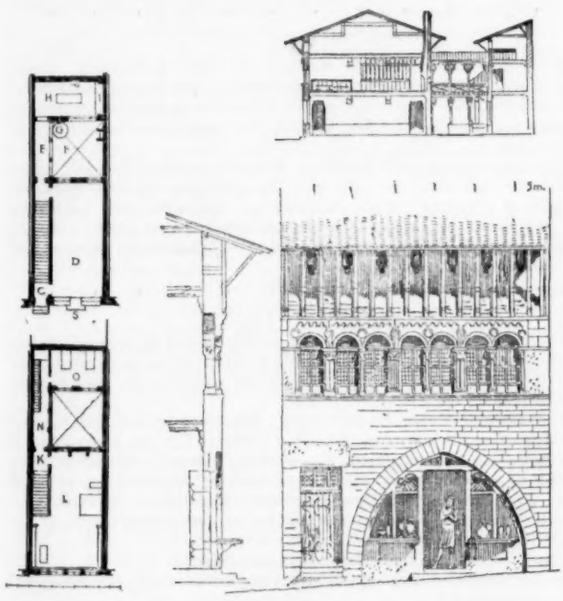


Fig. 4.

only, and built wooden houses upon their walls. They could thus have rationally developed a system of construction from the two methods, engrafted upon one another by the mixture of the two civilizations. In stone-work the Gallo-Romanic influence was felt very late, but the wooden buildings had from the first a character which belonged unquestionably to the northern races and bore no resemblance to Roman carpentry.

This combination of the constructive systems of two opposing civilizations was a slow process, and the twelfth century hardly saw the intermarriage completed.

The lay school of the thirteenth century may be said to have entirely abandoned the Roman traditions, and it was only at this period that private buildings became truly French, homogeneous and logical in the use of material.

The Western manuscripts of the ninth, tenth and eleventh centuries, the ivory carvings of the period, and the Bayeux tapestry, define the Gallo-Romanic influence in the stone ground-floors of houses of the times, the Indo-Germanic methods appearing in the superimposed wood-construction.

Meanwhile the churches remained consistently Latin or Byzantine. While the nobles and burghers allowed the monks to arrange the architecture of their monasteries according to their customs (and these were Latin by tradition), they still controlled the building of their own dwellings, and despite the antipathy existing between the conquering tribes from the other side of the Rhine and the old Latinized Gauls, it would seem that in contact with these purer races, the Gallo-Roman remembered his origin, recovering, little by little his native tastes, shaking off the influence so long felt of the Roman arts, and struggling to found an art of his own. So that even in the twelfth century the domestic and monastic styles had widely separated in their art and in their methods of construction.

Civil architecture was born with the establishment of municipalities, and it at once took on an independent form, as much so as did the feudal castle which departed more and more from its model, the Roman villa, to whose traditions the abbeys alone remained faithful. It is always interesting to note that among a people left to its instincts, the arts, and especially that of architecture, reflect the tendencies of the popular mind.

In the twelfth century monastic architecture reached the fullness of its glory and entered upon its decadence. Saint Bernard tried to restore the meaning which it had gradually lost, by requiring simplicity as a first condition, but, after his time, the rigid art which he had tried to set up as a type for religious establishments was drawn into the common torrent.

Feudal, military and domestic architecture, on the contrary, developed with wonderful activity, the old remains of Roman arts were ignored, and nobles and people alike began to build in a style sufficiently flexible to satisfy all the varying needs and changing habits of society.

As soon as the power of the religious establishments was weakened the municipal and political spirit revealed itself, and before the century was past the industrial arts were solely in the hands of those men of the towns, who fifty years earlier had gone to the convents for everything, from the plan of a palace to the lock of a door.

It is unfortunate that nothing is left to us of those city houses of the eleventh century, in which the Gallo-Romanic traditions were mixed so strangely with the forms of architecture brought in by the North German tribes and by the Normans. Very imperfect accounts of the times are found in the manuscripts, from which, however, we can prove the existence of woodwork analogous only to the old woodwork of Denmark, of the Tyrol and of Switzerland.

The French city house of the end of the eleventh and the commencement of the twelfth centuries was no longer Roman. The windows did not open, as in ancient houses, upon an interior court, but upon the public street; the court, if it existed, was reserved for domestic uses. The entrance from the street was directly into the principal room, and nearly always raised several steps above the ground. If the dwelling was of some importance, this first room, in which they received and held their banquets, was supplemented by a back room, which served as a kitchen, or on ordinary days as a dining-room. The chambers were on the first story.

Figure 3 gives the plan of a house of the beginning of the twelfth century. From the street the entrance to the *salon* (A) is by a winding staircase, having a first landing with a seat and a second landing, before the wide entrance door, carried on a corbel or supported at the outer angle by a small column. Beneath this landing was the descent to the cellars, which were generally spacious, well built and vaulted, with central columns and double arches. Two-storied cellars were sometimes built in the wine countries.

Beside the entrance door, which was wide and heavily bound with iron, was a small opening from which to reconnoitre any one knocking. From the first *salon*, which was not generally lighted except by a window at the back and by the door in fine weather, the passage-way B leads to the "snail" staircase which ascended to the first story, and under which was the entrance to the small interior court D, common sometimes to several dwellings and having a well. From this court the back room C, used as a kitchen, was lighted. On the first story the arrangement was the same, the front room serving as a bed-chamber for the family, and the back room for the servants. This first story was very often of wood. More than half the front was pierced by generous fenestration and was shielded by a projecting roof, the walls, double at this period, seldom showing a gable to the street.

The panelled front of the first story was framed of large timbers carried upon very strong joists, the other end of which rested upon the partition wall, the spaces between the timbers being filled-in with rough-cast. Upon the surface of the stucco were traced incised designs. The soffit of the projecting roof and the panels were painted in striking colors, yellow and black, white and brown or red, or red and black. At the side of the plan is a view of the front of this Romanesque house.

[To be continued.]

THE DETROIT RIVER TUNNEL. — A dispatch from Detroit announces that a syndicate has been formed to tunnel the Detroit river from Canada to the Michigan shore; that engineers have investigated the matter and find that the tunnel can be constructed with ease, and that a company with $100,000.00 capital has been formed in Canada to carry out the project. Among the projectors are Messrs. D. O. Mills and George Bliss, of Morton, Bliss & Co., of this city, together with prominent California capitalists and the officers of the Michigan Central Railroad. Mr. D. O. Mills was seen at his office in the Mills Building and admitted his connection with the scheme, but said the business arrangements had not yet been so completed as to enable him to say much about it for the present. He, however, expressed a belief that the tunnel would be constructed, and thereby complete a railroad system from the Atlantic to the Pacific by way of Detroit. Mr. Bliss declined to talk on the subject. — *Mail and Express.*

EXHIBITION FOR THE PREVENTION OF ACCIDENTS.

CAPITAL
OLD CHAPEL
HOTEL DIEU : PARIS

IN former reports I have called attention to certain laws of the German empire insuring working people against accidents. To make these laws more effective and particularly to show practically how accidents may be prevented the project of an exhibition is near its realization. The exhibition is to take place from April to June, 1889, and the Prussian government has permitted the gratuitous use of the large exhibition place in Berlin near the Thiergarten and the Lehrte railroad depot for that purpose. The invitation to participate in the exhibition is extended to all nations, and I deem the project of sufficient importance to make it the subject of a report to the Department of State.

Permit me to give you from circulars and pamphlets before me, and from personal inquiry, a detailed statement regarding the objects and purposes of the exhibition.

The articles to be exhibited shall consist in machinery, apparatus of all kinds now in use to guard against accidents, in tools, working pieces and working materials, in models; in plans, drawings, photographs and specifications; in copies of regulations, rules for factories, statutes and printed matter relating to accidents and to their prevention, as far as they come under the province of trades and factories defined by the German accident insurance acts (Unfallversicherungs gesetze des Deutschen reiches). All articles that relate generally to the protection of laborers and to the promotion of their welfare and safety at the works insured will be admitted.

As a rule the exhibition of articles in natural size and of models will be prepared. Machines should, as much as possible, be exhibited in operation. Since not only protective contrivances but also complete machines and apparatus with protective devices are to be exhibited, the exhibition will have, to some extent, the character of an industrial exhibition, with the difference only that objects which serve solely for technical purposes, and cannot be classed as contrivances for the protection of working people against accidents, are excluded. It is not intended to show merely the efficiency of any machine, but rather the efficiency of the same in connection with devices for the prevention of accidents. The best protective device does not render a bad machine recommendable; but a machine, good in itself, furnished with model equipment for the purpose of preventing, as much as possible, accidents, must in future, considering the burden, under the accident laws, cast upon the trade associations, of necessity deserve preference over a like good machine, being, however, without satisfactory appliances for protection. The exhibition will, therefore, offer an opportunity particularly to all manufacturers of machines who hitherto have taken a special interest in the question of such perspective measures, or, in future, intend to do so, to introduce their productions to the members of trade associations.

But not only the participation of manufacturers of machinery and of persons who construct protective devices, the exhibition is also intended to familiarize all parties interested with the character and technical merits of all protective devices in use, and to give them an opportunity to judge of their value and effectiveness. It is therefore considered of great importance that owners of factories and others who use or who are to use such protective devices, and not merely manufacturers or constructors of such, should send models, drawings, photographs and specifications to the exhibition.

Groups 1 to 12 contain detailed suggestions to enable manufacturers and masters to answer for themselves the question, how far their p rticipation in the exhibition may be conducive to valuable results.

No one should incline to the idea that any device he has introduced for the protection of laborers is too insignificant to deserve exhibition. The prospectus says: "To this exhibition the motto applies, 'No thing is of so very little value as not to serve to protect and preserve human life.'"

In the classification of the articles to be exhibited the point of view was taken that many machines, apparatus, etc., are of so general a nature — such as motors, transmitters, elevators, steam boilers — that they and the protective measures to be applied to them might be regarded as a feature common to all works and factories insured. The division into groups provides, therefore, for a department A (groups 1 to 10), which embraces these interests in common, while an additional department B (groups 11 to 21), takes into consideration the special interests of single trades. A third department, C (group 22), embraces literature in relation to all these subjects.

. . . . . .

If the division into groups does not precisely define the limits of the prevention of accidents, but considers also the protection of laborers generally and their well-being at works insured, the following reasons may be cited for so doing:

Prevention of accidents and prevention of disease cannot be easily separated. The sudden action of poisonous gases produces upon the human organism frequently an injury which is denoted as "accident"; while in case of gradual action of the identical gases in the course of years an injury is caused which is designated as "industrial disease." Yet, doubtless, all that is done towards the prevention of such diseases must be likewise considered as a measure for the prevention of accidents. Thus in some instances the removal of steam and dust must directly be regarded as a measure to prevent accidents, since, as experience teaches in workshops which are filled with dust masses or opaque steams, accidents more frequently happen than in places with pure air and free outlook. But an additional argument may be adduced. A laborer who works in a good, wholesome air will meet imminent danger with a much clearer head than the person whose head is affected by bad air, in which he is compelled to perform his day's work. Nor will the healthy, strong laborer as easily succumb to the consequences of many accidents. From these and other cognate reasons devices for the ventilation of workshops and many other things which, at the first glance, may appear as extraneous and hardly appurtenant to an exhibition for prevention of accidents, have been embodied into this division of groups as subservient to the ends of the exhibition.

Special attention has been bestowed upon the protective measures on movable machine parts, as official statistics compiled for the year 1886, at the imperial insurance office, show that irrespective of the prevalence of various occasions for accidents in the several trades in the entire sphere of "insurance in case of accidents," such accidents as were caused by movable machine parts, occupy, among the more severe cases, the first place in number. Not less than one hundred thousand cases of accidents were reported in the year 1886; 10 per cent of the laborers injured under the insurance laws being entitled to an indemnification.

. . . . . .

DEPARTMENT A — GROUP III.

Protective measures in the working of elevators, derricks, cranes, and lifters. — Safety casings for approaches to elevators and lifters; self acting shutters; basket roofs for protection against falling bodies; devices for securing (holding in place) the raising-box in loading and unloading.

Driving, stopping, and breaking devices; catching devices; signal system for indicating the motion of the elevator; signal boards, and boards of warning; work instructions; hydraulic and pneumatic lifters; elevators; cranes of all sorts; safety cranks and windlasses, winches, safety chains, cords, and belts; exhibition of entire sets of elevator arrangements.

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GROUP VI.

Preventive measures against and saving means in case of fire in works insured. — 1. Fireproof building constructions generally; construction and material of partition walls and ceilings; roofing, fire-escape doors, etc.

Safe storage of supplies and waste: Measures against spontaneous ignition of materials; incombustible curtains for the prevention of the spreading of fire generally at working places; fireproof impregnation of wooden parts, stuffs, and working implements; asbestos and its application for fireproof devices; measures of precaution for heating; apparatus for dangerless boiling of varnish, pitch, and other easily inflammable matters.

Spark catcher. — Lightning-rod constructions:

2. Apparatus indicating too high temperature in drying-rooms and the out-break of fire.

Automatic quenching devices: Hydrants, system of pipe conduits; use of boiler steam for quenching; use of existing driving gears for the operation of quenching apparatus; water reservoirs; quenching tubs; hand, steam, gas fire-engines; extinguishers; quenching bombs.

3. Fixed and movable saving or escape ladders, escape nets, clothes, and hose, cords.

Organization of fire brigades; equipment of firemen: Representation of spaces and arrangements for keeping ready-quenching and escape implements; directions of service.

GROUP VII.

Provision for good lighting and prevention of accidents from lighting devices. — Apparatus and articles of all kinds which serve for lighting closed working spaces, and of working places in the open air; lamps, lanterns, etc.

Devices for lighting from outside spaces presenting danger of fire and explosion: Safety lamps and lanterns; safety fire-lighters; electric gas-lighters; use of phosphorescent colors.

Safety receptacles for working establishments for the reception of larger supplies of petroleum and burning oil: Apparatus for dangerless and cleanly taking small quantities of oil out of the receptacles (retail distribution for daily demand).

Devices for dangerless self-manufacture of lighting gas (from coal oil and waste): Electric lighting constructions for works, especially with a view of utilizing existing working forces. Organization of the lighting system and works; provisions (rules) as to filling, lighting, and extinguishing of oil lamps; as to the management of gas

conductors; as to the procedure in case of imminent gas explosion; as to the attendance of electric lighting machines and conductors.

GROUP VIII.

Prevention of accidents from poisonous and corrosive substances from obnoxious gases, etc. — Apparatus for safe storage of poisonous and corrosive substances used at works; litters and hand-cars for dangerless moving of vessels containing acids; devices for dangerless taking of smaller quantities of acids out of vessels and receptables.

Devices to prevent a rise of poisonous fumes at the openings of charging furnaces and apparatus; closures of retorts and the like; mechanical devices by which obnoxious substances are worked instead of by working men; communications as to the use of non-injurious materials instead of poisonous raw materials and products, or of such detrimental to health.

Ventilators, exhausters, and exhausting arrangements generally for the absorption of poisonous or injurious gases for the freeing of working-rooms from dust masses and steam.

Devices of every description for airing and heating work-rooms; devices for moistening and cooling the air in workshops; apparatus for the examination of the working air in relation to any gases, dust, moisture, etc.

Washing, bathing, and privy arrangements for working establishments; articles of equipment, for the working-people's clothing, and eating, of work kitchens.

GROUP IX.

Personal equipment of working people. — Work dresses suited to use for transmission attendants, as well as for male and female laborers near machines generally.

Protective eye-glasses and masks of every description for protection against pieces of working materials scattered round; gloves for use in handling, pushing, and sharp-edged work pieces; leather apron and gaiters of leather furnished with iron plate; shoe coatings and special shoes and boots for like purpose.

Work dresses affording protection against unusual temperatures or wetness; diver's clothing; articles of equipment for the handling of glowing masses, hot or corrosive liquids; use of asbestos, glimmer, etc.

Respirators of every description for protection against dust and gases when at work.

Helmets or cask apparatus with devices for the admittance of fresh air; equipment of men who, for the saving of persons, met with an accident, repair to places filled with fumes, steam, or fatal gases (building on fire, canals, pits, wells, etc.)

Detailed communications as to the experiments made especially with the various systems of protective spectacles and respirators at the works insured; for the elimination of the really useful information from the unavailable.

Devices for the protection of laborers attached to simple tools; for instance, protective baskets to chisels for catching chips and splints in riveting works; hilt baskets on blades and on hooks for getting extraneous bodies out of roller pairs, etc.

Improvements in tools of every description with a view of preventing accidents — for instance, safety guards in fastening hammer handles.

GROUP X.

Provision for injured laborers. — Instructions for the first assistance in accidents for the use of the persons employed at the works insured; suitable material and boxes for dressing wounds; litters, transportation caskets, and cars and the like; providing for rooms to dress wounds at works and for houses for sick and invalid laborers; artificial limbs for mutilated persons, and mechanical arrangements for the assistance of mutilated persons in lighter works — for instance, clock movements which make an artificial arm automatically to perform certain work.

Information as to the occupation of invalid laborers.

DEPARTMENT B.

Protective measures, chiefly of interest for several trades or groups of trades. — Here the following points of view must be considered: Motors of the several trades, or models, drawings, and photographs of motors, with model equipment; surrounding-guards of movable parts; expedient disengaging and lubricating devices; devices against the out-springing of rotary tools; devices (near machines) for the protection of laborers against parts of work pieces splintering off and against materials flung away, against dust developing during work, against obnoxious fumes, etc.; automatic feeding devices, as well as machines and mechanical appliances of every description performing work in the place of laborers — for instance, automatic introduction of stuffs and materials into stamping, kneading, pulping, and rolling works; substitution of hand-work near lixiviating-vats by automatic stirring and scooping works, etc. — with or without protective devices; apparatus under pressure and other apparatus peculiar to the several trades with model equipments, with a view of preventing accidents and of protecting laborers; protective measures near or on furnaces, stoves, or hearths; on basins and deepings; against falling bodies; in the treatment of explosive, inflammable, corrosive substances, and other preventive measures of every description for the protection of life and health of laborers, according to the peculiarity of the several trades; instructions of service in relation thereto, notices of warning, directions; representation of entire working establishments or departments of whole standard establishments (models, plans, photographs, specifications); situation, construction (building, material, style); judicial total disposition of the working places and working arrangements with a view of preventing accidents; location of boiler shops; mounting of motors, transmitters; grouping of motors and working apparatus; location of staircases, lifting and raising apparatus, the storing-rooms, and magazines, the railways, junction-rails, water canals, etc.; lighting, heating, airing; charity and humane arrangements for laborers; designs of model establishments for the several trades; collective exhibitions, all of which is to apply to the subsequent groups:

Group 11: Metal industry.
Group 12: Wood industry.
Group 16: Chemical, glass, and ceramic industries.
Group 17: Mining and quarry industries.
Group 18: Building trades.

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Industries and trades carried on on account of either of the states or of the empire are to be annexed to groups to which they naturally belong:

1. For exhibition are admitted all articles which are qualified to promote the ends of the exhibition (compare sections 1 and 2 of this report). Foreigners are invited to exhibit.

2. Articles to be exhibited must be reported on a special form intended for that purpose, and obtainable from the secretary of the exhibition. The bill of application must be transmitted in duplicate at latest by July 1, 1888, to the secretary of the exhibition, Director Max Schlesinger, No. 3 Koch Street, Berlin, S. W. Whether such application has been accepted, would-be exhibitors will receive notice as soon as possible upon receipt of their application.

3. Every exhibitor has to pay a fee of admittance of 25 marks, and a rent for the place allowed, viz: Per square meter ground surface within the exhibition premises, 20 marks; per square meter wall surface within the exhibition premises, 10 marks; per square meter ground surface within the arches of the city railroad, 15 marks; per square meter wall surface within the arches of the city railroad, 7.50 marks; per square meter ground surface in open air, 10 marks. The fee of admittance is to be remitted with the application to the secretary above named. Of rent for the place in every instance at least the price for 1 square meter must be paid. Payment of place rent has to be made within four weeks after the allowance of space. This applies also to cases in which the grant ensues at the same time with the acceptance of the application. Only full square meters are given. In case of articles of exhibition for the library neither a fee of admittance nor space rent will be collected. The same applies to drawings and models, inasmuch as they are exhibited by owners of works who do not make it a business to sell or dispose of such.

The managers and the committee reserve to themselves the right to exclude improper objects, and in this case fees and rents paid will be returned. Applications made after July 1, 1888, will be considered only if any vacant space remains.

The exhibition is to be opened early in April, 1889, and is to continue three or four months.

Objects for the exhibition must be forwarded free of cost between the 1st and 15th of March, 1889. All expenses incurred must be paid by the exhibitor. Upon application, tables, cases, etc., will be furnished at net cost by the committee. All articles sent to the exhibition must be removed within eight days after the close of the same.

The committee will secure cheap transportation, freight and custom-house facilities. The result of its endeavors in that direction will be shortly published.

It is further provided that no object exhibited can be removed before the close of the exhibition. Exhibitors may distribute circulars, and sell articles, but not to remove any unless replaced previously by another article of the same make and character. The committee will see to the insurance of articles, but take no other guaranty. Exhibited articles will be carefully guarded, but all other expenses must be paid by exhibitors. Steam power will be provided, and the price for its use published. Awards for eminent achievements are intended. If an exhibitor wants to be treated as *hors de concours* he should so state in making his application. The admission fee for visiting the exhibition will be fixed by the business committee. Exhibitors enjoy free admittance. Reduced rates of admission to the exhibition, as well as railroad fares, will be made for the benefit of working people. A catalogue will be issued, and special terms for the insertion of advertisements in the same will be published.

After the close a complete illustrated report, with a full description of the articles exhibited, is under consideration. It therefore lies in the interest of exhibitors to file, in the library of the exhibition, suitable sketches and descriptions of the articles exhibited.

The plan to arrange an exhibition of this kind originated with the Institute for Brewing ("Vernechs und Lehr-Austalt für Brauerei") in Berlin, which, on the occasion of a general meeting in May, 1887, subjected the question of preventing accidents to laborers to a careful discussion. The Malters and Brewers' Association of Berlin accepted approvingly the project, which at once received additional encouragement on the part of the Imperial Insurance Department, and the Prussian Ministers of Instruction and of Commerce. The exhibition place was offered gratuitously by the Government to the committee constituted; and the press, as well as philanthropists,

directed attention to the project as being particularly appropriate at a time when social-political legislation claimed general attention. A committee, consisting of ten members, was formed, and a guarantee fund of 100,000 marks subscribed. Any surplus produced by the exhibition is to be given to purposes of public good — for instance, for a "permanent exhibition of articles for the prevention of accidents," and for the erection of a hygienic museum.

In view of the circumstance that the plan has been matured only of late and full information was not procurable at an earlier date, doubts may arise whether the Berlin Exhibition, limiting applications to the 1st of July, 1888, will facilitate the participation of manufacturers of the United States. But it suggests itself that an exhibition of this kind, as proposed to be held in Berlin has the merit of a practical step towards solving to some extent the problem of social reform and betterment of the condition of the working classes now occupying the minds of so many of our statesmen and political economists.

F. Raine, *Consul-General.*

Berlin, May 4, 1888.

NOTES FROM GERMAN SOURCES.

Referring to an article on the Washington National Library Building, published some time ago by the *American Architect and Building News*, the *Deutsche Bauzeitung* of April 21, says:

Mr. Smithmeyer claims that among recently erected buildings on both hemispheres, none approaches in magnitude his design for a National Library. We would like to call Mr. Smithmeyer's attention to three buildings quite recently completed, of which the one equals his library in size, whilst the other two surpass it very considerably.

The Berlin Technical High School Building, completed but four years ago, covers an area of 111,000 square feet, which is just equal to the Washington Library. The new Hôtel de Ville of Paris, measures, without court-yards, 123,800 square feet, and finally the Palais de Justice, at Brussels, covers a lot of 200,000 square feet (not counting the court-yards), and if you add the projecting terraces and steps leading up to the entrances, this enormous lot is increased to 215,000 square feet, almost double that on which the Library at Washington is to be erected.

The Brussels Palais de Justice, therefore, would seem to be the largest of all edifices of more recent date, unless the permanent stone-and-iron building erected for the Vienna International Exhibition in 1872, covering 323,000 square feet, be accorded that distinction.

Professor Jordan, in the *Vienna Bauindustrie Zeitung*, tells of a chimney-stack near Marseilles, France, which, during a violent gale, showed oscillations which by observing its shadow were found to measure twenty inches. The height of the stack was 115 feet, its outer diameter four feet at the top. After each attack by the force of the gale, the stack was observed to oscillate from four to five times until it came to a halt. Some observations taken in Vienna, by means of a theodolite, showed a stack, 164 feet high and six and one-half feet inside diameter, to move during a high wind six and one-fourth inches. Again, an officer of the Prussian Corps-de-Génie, who had been detailed to make some geodetic observations from the gallery of the St. Ægidius tower, at Hanover, Germany, found himself unable to do any work during a brisk wind, because the tower (being 230 feet high) swung merrily to and fro under the breeze. Professor Jordan concludes by inviting his professional brethren to aid him in collecting observations of a similar nature as throwing light upon the reliability to be placed on towers as points of observation. The matter is besides of importance as regards the stability of buildings of great height.

The King of the Netherlands has placed the portfolio of his most important ministry, that of Waterways, Commerce and Industry, into the hands of Mr. J. P. Havelaar, Chief Engineer of the Canals and Waterways of the province of Drenthe, an excellent and most fitting appointment when it is considered, that Mr. Havelaar brings to his new office not only great technical and administrative ability, but also a familiarity with all the needs of that complex network, the Dutch waterways, obtained through years of diligent work in their service. The estimate for this department, which exceeds those for the war and educational departments, figure as twenty-four million florins in the budget for 1887, equal to ten million dollars.

The reign of the late Emperor William of Germany was a propitious one for the development of architectural art in that country to a remarkable degree. There can hardly be any doubt, but that the historical events which made the German people once more a solid nation, have had a great deal to do with the revival and subsequent prosperity of the arts and industries which we note in Germany during the last twenty years. The national idea sought to take shape in a variety of ways, furnishing poets, musicians, painters, sculptors and architects with tasks grand and splendid enough to satisfy the highest wishes of artists.

Since 1860, when William assumed the regency of Prussia, says the *Wochenblatt für Baukunde*, a number of edifices of the first rank were planned and erected, whilst others commenced earlier were by him carried to a glorious completion. It filled the aged Emperor with proud satisfaction to be present at the opening festivities of the famous Cologne Cathedral, to complete which he had contributed so liberally from his private purse. The project of erecting a grand Protestant Cathedral in his capital was through him advanced by inviting the leading masters of the nations of Europe to an open competition which was largely participated in. It was perhaps the thought that his life might not be spared long enough to carry out this favorite project that caused Emperor William to leave it for his successor to accomplish.

The erection of the German Parliament Building, in whose progress he took a deep interest, we find to be going on with rapidity. It is but a few years since he himself laid the corner-stone for this vast edifice, and already we hear of its masonry being finished in the rough.

Another majestic structure, the Imperial Palace of Justice, at Leipsic, for the Supreme Court of the German Empire, will soon rise above ground.

William unveiled the great National Monument upon the Niederwald erected by a reunited people in memory of the uprising of the nation and glorious victory over the common enemy, France, in 1870.

The grand Column of Victory, on the Koenigsplatz, at Berlin, owes its existence to his initiative. He gave the order for the erection of an imperial palace at the city of Strasburg in Alsace, which is now approaching completion.

Liberal appropriations were granted under William's reign for the restoration of the old Marienburg Castle in East Prussia, probably the most valuable relic of the Romanesque style of the thirteenth century to be found anywhere, also for the restoration of the Imperial Residence at Goslar, at the foot of the Hartz Mountains, first built in the year of 920, where the emperors of the Saxon and Franconian dynasty held court during two centuries and more.

But his generosity was not limited to works of national glorification; his Government granted still larger sums for enterprises intended to benefit the whole civilized world. We refer to the explorations and excavations the late Emperor had carried on upon the classical soil of Olympia in Greece, and Pergamos in Asia Minor, which, the world knows, have yielded so rich a harvest.

He fostered the German Archæological Institutes established at Rome and Athens, and all over the broad field of architectural activity, his influence was stimulating and highly beneficial.

With keen understanding he approached questions of an artistic, as well as technical nature. So we are told by architects whose duty it was to report to him upon professional matters. When comparatively young in years, he manifested sound judgment when from various plans submitted for his new palace "Unter den Linden" he selected the best plan presented by the best master for execution.

BÖCKLIN AND HIS NEW PICTURE.

Cathedral at Brechin, Scotland.

Böcklin has often before been called the Gabriel Max of landscape painters. Since the "Pietà" has taken its place in the procession of remarkable paintings that wend their slow way through the exhibition-galleries of Europe and the press has been occupied with the artist, the comparison of his work with that of Max is made again. The feeling, as one can discern, is that the talent of both belongs to the same extraordinary morbid type. In the case of the "Pietà," there is also to be reckoned the striking resemblance of treatment of the Virgin's hand with Max's group of wringing, writhed and folded fingers in "Ecce Homo." I incline to think that Böcklin may have had his late young friend's picture in mind when deciding upon this point of the composition. As for the comparison in the main, it is to be remembered while using it that whereas Max selected the horrible in tragic human fate and imbued each personage with intense spiritual life and concentration of passion, Böcklin diffuses the tragic by means of his coloring over the whole scene. The parallel, in

short, lacks significance in proportion as we retire from the habit of conception common to the two artists to the details of their pictorial expression and technical execution.

Böcklin of late years has painted chiefly figures. He possesses enough skill as a draughtsman and modeller when he chooses to exert himself, but his superiority of knowledge lies in the early and favorite direction of his genius. In his landscape paintings, his choice of subject was often felicitous. Nature has her objects of vast dimensions and of historic dignity, her dire and weird aspects. All are fitting themes for morbid fancy, fitting, too, for the supernatural in Böcklin's tone of coloring. This light-transfused, moisture-laden blue is a blue for out-of-doors, a blue of which Goethe would say, "it conveys a feeling of coolness, it has a singular and inexpressible influence, it attracts us strangely, not by intruding upon our sight, but by drawing us after itself." [1]

What a satisfactory piece is his "Ruined Castle by the Sea!" and I think of that other, "The Shrine of Hercules," where three pirate warriors are represented as come upon a holy shrine, on a bright night, near the sea. One stands out upon the rocks on guard; the two others creep round the encircling high wall to the edge of the opening and sink on their knees to mutter their quick prayers. A tree, that to have attained such dimensions in a spot like this must be of an untold age, grows within the enclosure and stands out a solid mass against the night sky, while flowers are discerned hanging over the wall. If here the red of the cappa of the warrior on the watch is a bit of color flung, as we know, with a mere artistic purpose against the shimmering blue of the salt water, we forgive it, for we are easily done with it. We turn from the shrine and the warriors kneeling in superstitious fear to the stiff, archaic figure on its high pedestal, a figure that is lost, as we feel are the sentiments of these men of blood, in funest and shadowy maze. A suggestion of solitude and vastness is in the scene, without any attempt having been made by the artist to depict extent and emptiness, while the human emotion natural in such surroundings is embodied by a choice of means that is direct and highly satisfying. We are free from the suspicion upon looking at these canvasses of having to do with a self-opinionated artist. We can think instead that originality has enriched, not only the schools by proofs of latent power and astonishing technical mastery, but Nature herself, by an unaffected interpretation of an earnest mood.

In the "Pietà," a division is made of the composition into an upper and lower portion. The latter contains the figures of the crucified Christ and Virgin Mary. The lifeless body lies stretched out in stiff lines upon a marble tomb. The whole is bathed in the blue grotto-like tone which Böcklin loves to employ, while a blending white light streams through a suspended cloud. The upper portion is filled by a group of consoling angels. Such is the composition. So far nothing is discomforting. The corpse of Jesus is realistic, but the old masters have accustomed us to realism in this theme, as well as to the division of pictures into upper and lower portions. Where our composure and traditional opinions are startled is at the fact that nothing of the Virgin besides the wide dark-blue mantle that envelopes her and *one* hand is visible. By degrees the prostrated form grows distinct, together with the whole wonderfulness of the tender, white, delicately-veined hand pulsating with violently-agitated blood. It furnishes a touching, almost an overwhelming contrast to the rigidness of the dead body on which it lies.

We have here, no doubt, the *tour de force* of the painting. The lowermost angels are beautiful. They are painted moreover carefully, whereas the remaining ones are depicted with sketchy hastiness. The flowers that adorn the tomb, while overspread with the blue glow that fills the place, retain a splendid richness of native color. Böcklin is not only a master in glazing of the true Munich type; he also employs, it is said, certain secrets, that he has discovered of encaustic painting. Perhaps they were here put in use; it was impossible to get near enough the canvas for inspection. The whole, as well as particular parts, conveyed the impression of unmistakable power. But in this instance it is a power which impresses us more than it delights. COUNTESS V. KROCKOW.

[1] *Zur Farbenlehre.*

NOTES AND CLIPPINGS

FIRE RISKS OF ELECTRIC LIGHTING.— M. Mascart recently performed before the French Physical Society a number of experiments illustrating the possible dangers of fire from electric light. In introducing the subject, he stated that it was necessary in electric-light installations to take precautions against the undue heating of the conductors, and to avoid the risk of materials being ignited by the heat generated in the lamps. In the case of insulated wires laid beneath mouldings, the heat generated was generally dissipated by conduction which kept down the temperature of the wire and its covering. But an excessive current might destroy the insulation and inflame the wood. An experiment was made with a wire of 1.2 mm. in diameter, laid on a block of wood and covered with another block. This wire would, in ordinary practice, carry a current of 4 ampères, but in this experiment a current of 40 ampères was passed before it commenced to carbonize the wood. With a much greater current the wood was inflamed at a point where the wire was uncovered, as between the boards the lack of air prevented ignition. In order to see what amount of danger was to be expected from the lamps themselves the following experiments were made: 1. The globe of an arc lamp was covered with several thicknesses of a light fabric of green tarlatan. 2. A glow lamp of 32 candle-power was covered in a similar manner, the folds of the fabric being pressed on the lamp by an india-rubber band. 3. An incandescent lamp was covered with a cotton hood. 4. A glow lamp was covered with a similar hood of black silk, which was surrounded by another of velvet. 5. A lamp was covered with a layer of white wadding, the gummed surface of which had been removed. 6. Two glow lamps were covered with layers of wadding, white in one case and black in the other. 7. A lamp of 32 candle-power was placed in a vertical fold of an old theatrical scene; and finally, 8. A lamp of 300 candle-power was laid on a similar scene. In cases 1, 2, 5, and 7 no carbonization nor excessive heating was caused for twenty minutes. In case 8, the scene commenced to carbonize without flame at the end of 1 1-2 minutes, and at the end of 2 minutes the envelope of the lamp in 5 burst into flame, and in about 6 minutes the velvet calotte in experiment 4 commenced to burn slowly; this experiment was prolonged without breaking the lamp, but the globe was deformed. The cotton hood in 3 was partially carbonized at the end of 10 minutes, but was not set on fire.— *Engineering.*

A CASE OF TRESPASS.— William and Ferdinand Setzke are cousins and are the respective owners of adjoining lots at Thirty-first and Fox Sts. Some years ago Ferdinand built a house on his lot, which encroached two feet and two inches upon his cousin's land. William verified this by a survey of the land after he and his cousin had had a falling out, and at once instituted suit for possession of the strip preempted by Ferdinand. He recovered judgment for possession and refused to compromise except by getting his land. The case was fought bitterly. The Supreme Court decided that William was entitled to his land and an order was entered directing the issue of a writ of possession. The writ was issued, but Sheriff Matson failed to execute it, and William secured a rule by Judge Baker to show cause why he should not be attached for contempt of court. The sheriff answered the rule by saying it was impossible for him to execute the writ without tearing down a portion of the house built by Ferdinand Setzke, or trespassing on his property. While it was admitted by the sheriff's attorneys that the plaintiff was entitled to undisturbed possession of as much of the defendant's building as encroached upon his land, the trouble seemed how to get there. The door of Ferdinand's house was on his own land, and the sheriff had no right to go through it without the owner's permission, which he could not get. If he entered the door, Ferdinand could legally defend his own property, and if need be shoot the officers, and the sheriff did not think the court would require him to take his life in his hand and make him attempt to enter the premises. The court cited a case in New York, where one man infringed upon another's land by building a brick wall an inch and three-quarters over the line. The other man secured a judgment for possession, but the trespasser coolly told the sheriff to go and take an inch and three-quarters from the brick wall, but defied him to trespass another eighth, or even a sixteenth of an inch. "The defendant," said Judge Baker, "has the right to live in that part of his house which does not rest upon the plaintiff's land, and to live there his allotted three-score years and ten, but the plaintiff certainly has the right to do what he pleases with the portion of the building on his land. He may saw off two feet and two inches, provided he stays on his own land and does not trespass on the other's land; or he may cut a hole in the side of the house and enter upon so much of the premises as is built upon his land. You may hold that this would be a trespass, but I hold that it would not be, if he does not infringe on the defendant's property. The demurer of the sherriff is overruled." —*New York Tribune.*

ARTISTS SHOULD DISCARD TURPENTINE. — About a dozen years ago the collected works of Landseer were exhibited in London. I was shocked on observing that some of his finest works were miserably faded. This was notably the case with "The Sanctuary," a picture of a red deer that had just crossed a lake and was emerging with the water dripping from its fur. When this was first exhibited at the Academy I admired, among other details, the sparkling brilliancy of the water drops, and the general suggestion of cool freshness throughout the picture. At the later exhibition all this had gone. In naming this I am not selecting an exception, but a typical example of the early fate of the pictures of the majority of modern artists; some become faded, others wrinkled and reticulated with a network of cracks, even during the lifetime of the painter, while the works of the old masters remain with very little decay during many generations. My opinion is that the turpentine of the medium is the chief offender, and that the true artist should discard it altogether as fitted only for the work of the house painter, of whom rapid drying and flatting are demanded. Careful examination of the surface of the works of the older of the old masters has led me to doubt whether they used turpentine at all, and to conclude that their medium was linseed oil pure and simple, used so freely that the drying of their pictures must have demanded days or weeks and a studio free from dust. With such a medium every individual particle of the pigment matter is enveloped and sealed in a curiously imperishable transparent skin, which dries by gaining something, namely, oxygen, and therefore swells a little in thus drying, thereby compacting itself and embracing more firmly with loving æsthetic hug the precious color particles that constitute by their arrangement the artist's pleasure-giving legacy to his fellow-creatures. Not so the turpentine-diluted medium. In this case half of the medium evaporates, leaving the poor particles of pigment half naked to their enemies. Some painters have mixed varnishes, such as copal or mastic, with the oil medium, or have even used these as the sole medium. The result of this is peculiarly disastrous, especially if the color is laid on thickly, as is likely with such a viscous and quick-drying medium. As the solvent of the varnish evaporates the whole contracts and leaves a network of cracks or wrinkles, practically destroying the picture. — *W. Matthieu Williams, in the Gentleman's Magazine.*

GROWTH OF NATURAL GAS BUSINESS. — Some idea of the extent of the use of natural gas in Pittsburgh, Allegheny and vicinity, and the

profits of the business, may be had from the report of one of the companies just presented. It states that on February 29 the last of the treasury-stock had been sold, so that the entire capital stock of $7,500,000 is now subject to dividends. Rents, operating expenses, interest and taxes for the year amounted to 46.65 per cent of the earnings, or $1,709,702.74. Monthly dividends of 1 per cent, amounting to $842,626.50, have been paid. The number of house-connections made from the lines of the company during the year 1887 was 4,612. A year ago the company contracted to operate the lines of two other companies. The united business of these three companies amounted on March 1 to the supplying of 678 manufacturies and 11,955 dwelling-houses, and, through other distributing companies, the supplying of 113 factories and 10,961 dwellings, or a total of 23,707 contracts. — *N. Y. Commercial Advertiser.*

Effect of Ammonia on Animal Life. — An explosion of an ammonia tank occurred May 6, at the Buckeye Brewery with a very strange result. Almost immediately after the explosion every bird in the neighborhood fell dead. Chippies, English sparrows, and canaries all suffered alike, and after the shock dead birds could be seen lying about the sidewalks in that locality in great numbers. The explosion caused an alarm of fire to be sent in, and the horse attached to the Hose Reel No. 5, which responded, came near being killed by the ammonia. The animal dashed towards the supposed fire with all the speed he possessed, but when the strong odor of the ammonia struck his nostrils he was completely overcome and could not move. The horse was at once withdrawn from the place and restoratives applied. John Loder, George Kotts, Laborers, and Fireman Ross were in the room at the time, but escaped uninjured. Besides the injury done to the tank the company will lose $500, the value of the ammonia. — *Cincinnati Enquirer.*

A Sagacious English Workman. — There is a good deal of the much esteemed "get there" quality in your genuine Englishman. His methods are sometimes crude, but he sticks to it and "gets there." A good many years ago a gentleman whose name stands at the head of the largest wire manufacturing establishment in the world — it was a very modest concern then — went to England and bought some steel rods to be shipped to this country and drawn into wire. A workman there saw them, and made up his mind that wherever they were going there was work for him. He asked no questions, but made up his mind to follow the rods. He saw them loaded on freight cars in Birmingham, made friends with the train-hands and accompanied them to Liverpool. He saw them unloaded at the dock there and kept his eye on them. He saw them put aboard ship, and took passage for America in that vessel. He saw them landed in Boston, and again kept his eye on them until they were again put on freight cars. Again he followed them till they reached their destination, presented himself to those who received them, told his story, got a job and kept it until a year or so ago, when he died, leaving sons behind him who are employed in the same establishment. He knew enough to "follow the rods" and ask no questions and he "got there." — *Boston Herald.*

London Theatres in the Sixteenth Century. — Dr. Gädertz of the Royal Library, Berlin, has found a valuable manuscript and drawing relating to a theatre of Shakespeare's time. Although drawings of the exteriors of several ancient London theatres have been preserved, the oldest representation of the interior of such a theatre is that of the Red Bull, dated 1672, and therefore not belonging to Shakespeare's epoch. The date of the original papers which Dr. Gädertz has fortunately discovered is 1596, and they contain important news concerning the old English stage, especially the Swan Theatre. A learned Dutchman, John de Witt, Canon of St. Mary's Church in Utrecht, visited London in 1597, and noted many remarkable sights, and he describes Westminister Abbey, St. Paul's Cathedral, and other buildings. But the most curious of his reports is that on the theatres. There were four large and splendid play-houses in London about 1596, the Theatre and the Curtain, towards the north, the Rose and the Swan. We learn that each of these was an oval, beautiful structure, not of wood, but built or faced with flint and marble, and of considerable size, the boxes and galleries containing 3,000 seats. John de Witt's sketch is also highly interesting, and neatly drawn. We see the actors on the stage, in the costume of Queen Elizabeth's age, the audience, the "lords' rooms," the doors, and the "tiring-house" in the background. Dr. Gädertz has just published de Witt's documents and drawing. His book, entitled "The Old English Stage, and other Shakespearian Essays" (Bremen, Müller), with two illustrations, will undoubtedly create some excitement in the literary world. — *London Times.*

Pile Dwellings in Africa. — "In the Kedebu country," says Emin Pasha, in his journal, "we come upon the pile-dwellings. A platform supported upon over 300 stout piles, each one six feet high, stood within a broken-down bamboo fence. It had a length of ninety feet, a width of eighty feet, and was made of timber and brushwood, and covered with clay and cow-dung, to form a level flooring. The ground-floor among the piles serves as a kitchen and storehouse; the water-jars and the *murhakka* (grindstone) are placed in it, and the servants sleep there. A square hole in the centre of the platform provides this lower room with light, and ladders lead through the hole to the platform. This latter is divided by a reed fence into an outer and inner compartment, the former containing two large huts, each about fifteen feet in diameter, with neat mud walls about three feet high, and a lofty conical roof. These two huts serve as a dwelling-place for the master of the house. The inner compartment, or harem, contains six smaller huts. The whole arrangement is really curious, especially here, where the ground is not swampy, and where termites [white ants] are only seldom found, so that there appears to be no real reason for such a method of house-building." Around each homestead is a garden, in which are grown maize, onions, beans, egg-apples, banannas, lemons, bitter oranges, etc. — *Chambers's Journal.*

Canopy for Washington. — Greenough's colossal statue of Washington being injured by exposure to the weather, the Senate adopted on May 7, a resolution directing the Library Committee to inquire into the expediency of moving it from its present location, just east of the Capitol, to some other place in the grounds, and of having it protected by a canopy. This statue was purchased in 1832 at an expense of $20,000, and the total cost of its several removals, including the original transportation from Italy, was $29,000.

Discovery of Roman Statues. — Three statues of Roman art were discovered and seized yesterday; one of the Emperor Hadrian, another of Antoninus, and the third a small Bacchus. All three are well preserved, and of excellent workmanship. — *London Daily News.*

TRADE SURVEYS

Competition is still straining every nerve in manufacturing and trade circles, and according to commercial reports, from twenty to thirty traders are daily being crowded down or out. This competition has received considerable momentum since the opening of spring, and at this time it is moving with a force which no possible combination can arrest. Under no conditions could legislation accomplish what competition is now doing, and it is probable that when the force of the present movement is exhausted, there will be much less occasion or need of National or State legislation to protect the interests of the general body of consumers. Business is as active as could be expected under the circumstances, but still it hangs about ten per cent below the corresponding weeks of last year. Restriction is the rule in all channels of trade; manufacturers are providing only for actual present or well-calculated requirements. No matter what line of trade is taken, we find the same circumspection and conservatism. Accumulations of stock are carefully avoided; indebtedness is avoided, and credits are guarded as carefully as possible. In fact, a more conservative business is now being done than ever before. Manufacturers, financiers and the controllers of business generally are taking a long and careful look into future probabilities, and acting in such a way as to save themselves from complications, no matter what turn affairs may take. All the iron and steel manufacturers, it appears, have resolved to ask their workmen to consent to a ten per cent reduction in wages; if this request is persisted in, it will probably lead to a strike which may last three or four months unless the employers surrender. The iron and steel workers have the strongest combination in the United States, but it is not so strong but that it may be defeated. It has stubbornly and successfully resisted any reduction in the rate of wages for several years, but now there seems to be good reason for a reduction, and if they oppose it, they will be on the wrong side. The Eastern and Western nail-makers have united upon a classification which will prevent friction and result in greater harmony. The steel manufacturers have also harmonized and are acting together. In the various branches of the iron trade there is more harmony than formerly, but, at the same time, greater competition than ever. The steel-rail makers have lowered their prices to thirty dollars, and it is now rumored that less money will be taken before the close of the month if orders can be had. The coal production is ahead of last year's output, and in the anthracite trade producers are maintaining prices at a high point. In the bituminous regions more mines are being opened, and preparations are being made for a considerable increase in production next year. The car-builders throughout the country are still loaded up with orders and have their capacity engaged for a long time ahead. There is great activity among the locomotive-builders and in all the ship and boat yards of the country. In the boat-yards along the Lakes, a great deal of craft is being contracted for on account of the business developed from the operation of the Long and Short Haul clause of the Inter-State Commerce Law. Domestic exchanges are steadily increasing and the volume of business done at interior points is growing more rapidly than along the Atlantic Coast. That is to say, Boston, New York, Philadelphia and Baltimore are losing relatively as to Chicago, Cincinnati, St. Louis, Kansas City, and two or three other Western points. The great Mississippi Valley is rapidly filling up with a thrifty population, and from the diversification of industries going on, it is creating great commercial centres throughout the interior, which promise in time to rival those of the Atlantic Coast. The architects and builders throughout the West report a little falling off in building activity. The chief activity is in the direction of small house building in cities and towns. A great deal of work of this kind will be done during the fall. In fact, the probabilities are that next year, no matter what else may happen, an immense amount of building in the way of small houses will be undertaken. The capitalists and manufacturers who have entered into this work as an experiment have been greatly pleased at their success and the returns and will enter upon still larger schemes for house construction next year unless a serious setback should be given to general business. The lumber trade is slackening up throughout the New England and Middle States, but maintains itself well throughout the far West and in the South. The textile capacity throughout the East is fairly employed, but taking the industry as a whole, North and South, there is not as much activity as last year, nor are the margins as encouraging to new concerns. The Southern textile interests are under excellent management and generally have abundant capital behind them and are able and evidently willing to stand any reasonable amount of discouragement which competition may develop. All of the smaller industries are struggling along under healthful conditions. Narrowing margins are making it necessary to invest capital in larger blocks than years ago; yet there are better opportunities to-day than ever before in the history of the country for persons of small capital, provided they are wise in their selection of a location and the particular avenues upon which they enter. The glass-makers everywhere are busy. The makers of brick are oversold, excepting in New York and New Jersey. Manufacturers of building material generally are busy, with a fair prospect of employment throughout the year. The builders of machinery have nearly as much business as twelve months ago and in some directions more. A large amount of engineering machinery and appliances will be contracted for this fall. Should the railroad-builders conclude, late in the fall, to renew railroad building on a large scale next spring, which some financiers think they will do, it will result in the placing of a large number of orders for the winter, which, in turn, will stimulate business in all directions and help the iron trade out of the slough into which it has gradually slipped.

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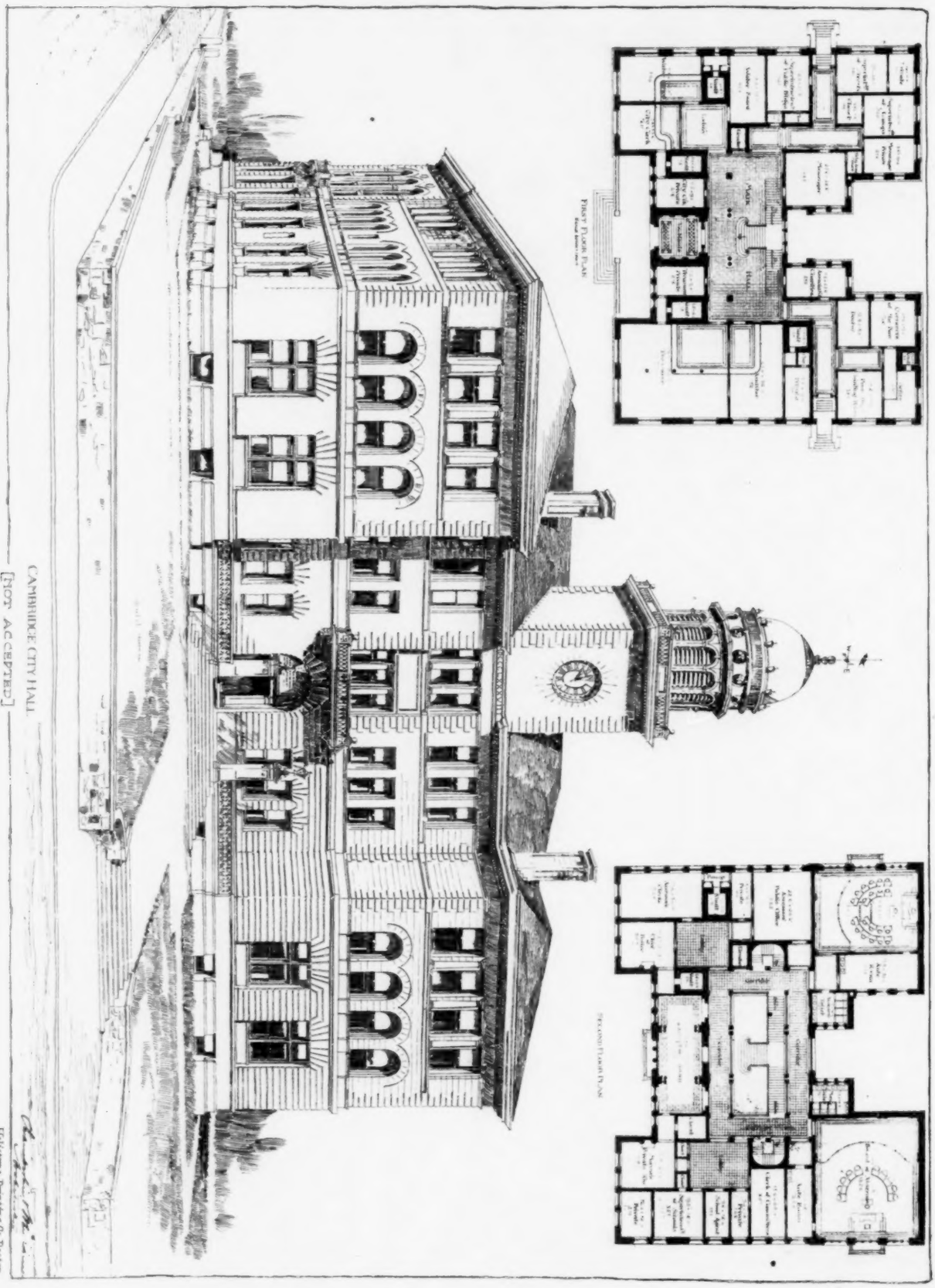

CAMBRIDGE CITY HALL.
[NOT ACCEPTED]

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First Study for Dedham Inn.

Wheelwright & Haven, Architects.
6 Beacon St. Boston, Mass.

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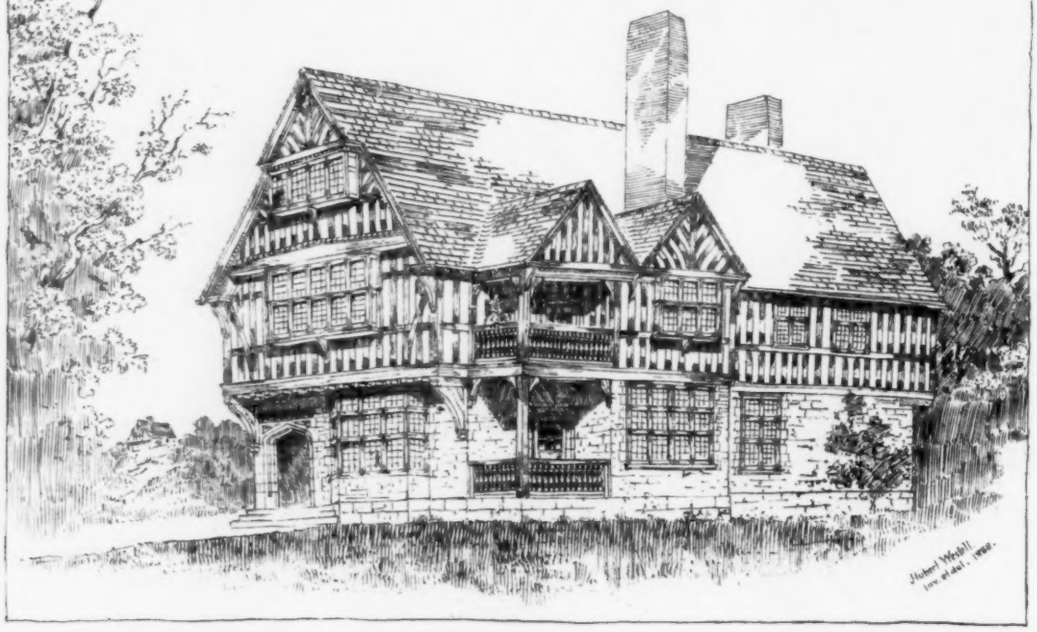
A Country House



A Country Club

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House at Washington, Pa.

E.G.W. Dietrich, Architect. 18 Broadway, N.Y. City.

Plan of First Floor

Plan of Second Floor

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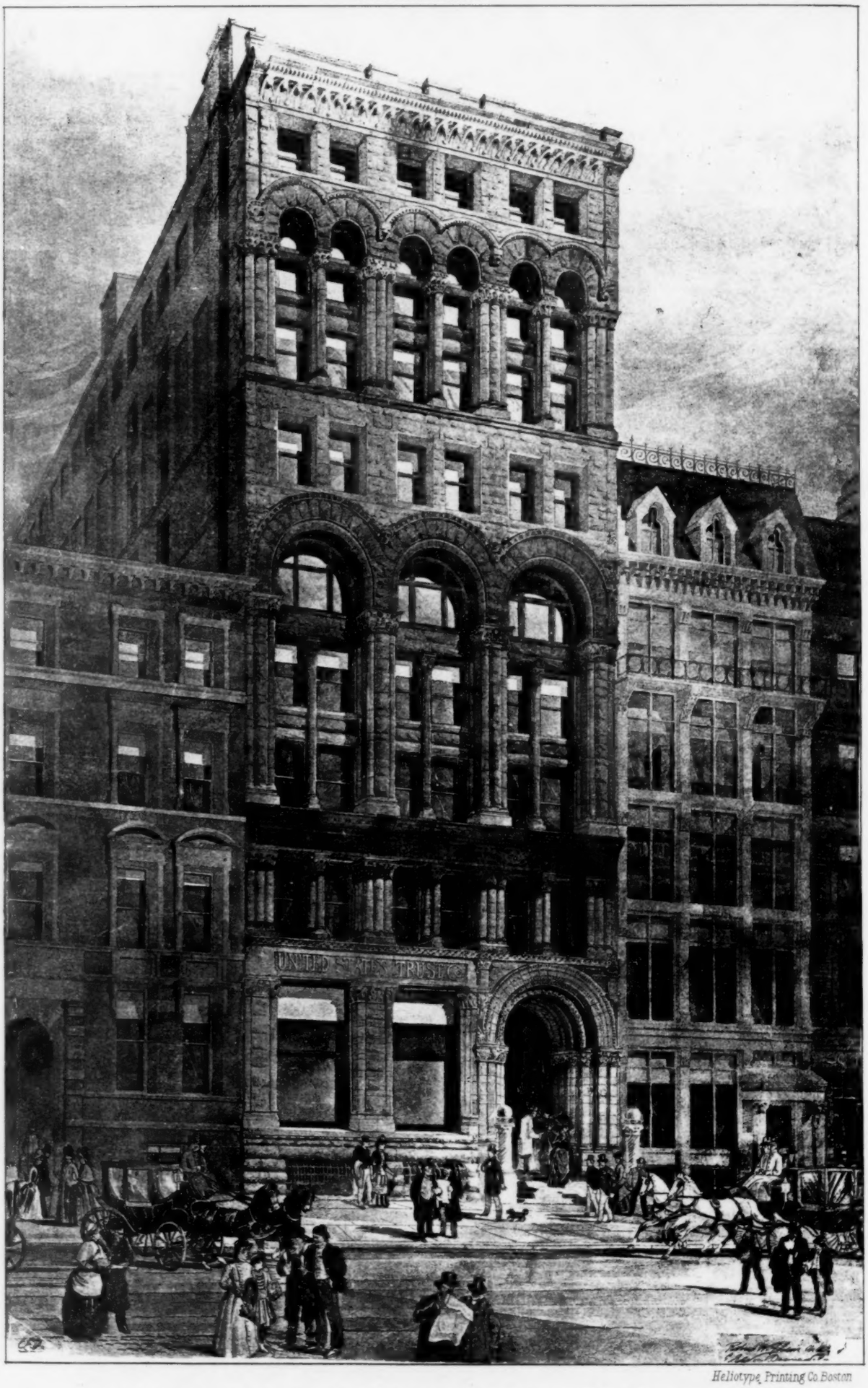

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